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LECTURE.

HEART SOUNDS IN DISEASE.

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GENTLEMEN:—I shall show you some cases to-day which will give me the opportunity to illustrate on them some points that will be of great assistance to you in the diagnosis and study of chronic heart disease. If you can keep in your memory what I shall now explain to you, you will in future find less difficulty in recognizing these affections.

First, a few words about the causes of heart lesions. The latter are either inborn, being hereditary in a family, develop later in the individual without any other apparent cause, or they are acquired in consequence of a violent force striking the region of the heart, or appear after very fatiguing marches; both causes producing occasionally endo- and pericarditis, and these, as their sequelæ, chronic heart lesions. Or, lastly, these affections show themselves first as complications in certain diseases and cachexias; as in acute articular rheumatism, morbus Brightii, syphilis, gout, etc. As regards the causes of functional heart complaints, they are innumerable. Dyspepsia is, perhaps, the most frequent; but uterine affections, certain occupations, neuroses, the use of tobacco, and any influences which make the blood poorer in red corpuscles and produce general debility, may occasion a disturbance of the functions of the heart.

Remember, then, that heart diseases may be divided into functional and organic. We call

an affection of the heart a functional one if the function of the organ is disturbed but no anatomical alteration of the latter exists. There may be a great deal of palpitation, at times embarrassed respiration and severe pain in the region of the heart, but the physical exploration reveals no morbid change. The organic heart diseases are those where any part of the organ has undergone an anatomical alteration. Here the so-called heart-symptoms are less prominent; pain and palpitation are, as a rule, less complained of; we have frequently greater and more constant dyspnoea, but by far the most symptoms that accompany organic lesions do not draw the patient's attention to the heart, but refer to the head (giddiness, headache), the stomach (dyspeptic symptoms, due to congestion of liver and stomach), the nervous system (irritability, feeling of great anxiety, tremor), and to the circulation (venous stasis, dropsy, etc.). It is, therefore, by physical examination only that we can recognize organic diseases of the heart.

And here, gentlemen, let me remind you that you must make yourselves, at first, thoroughly acquainted with the normal area of percussion dullness and the normal sounds of a healthy heart before you begin to study its lesions. Percuss so often a healthy heart, and listen so frequently to its sounds, till you know both. You define the heart by percussion best in the following way: Percuss first downward from the middle of the left clavicle, till you reach a dull sound, which will be, in a normal heart, at the lower border of the fourth cartilage. Then you percuss on the right side on a level with the fifth rib, beginning, say, at the nipple and go across the sternum, till you again elicit a duller sound

with a feeling of resistance to the finger. This will be at or near the left edge of the sternum. Having determined these two points, you feel for the impulse in the fifth interspace (between the fifth and sixth cartilage and inside of and about two inches below the nipple), on the left side of the chest, and connect the three points by lines, resembling about the form of the heart (size of closed fist), and you have the normal area of percussion dullness. This answers all practical purposes, as it is very difficult to define the lower border of the heart.

We divide all chronic organic lesions of the heart (omitting here the affections of its membranes and the rarer heart diseases) into diseases of the muscles of the heart and into those of its valves. The first we recognize by percussion mainly, and the second by auscultation. The most important and frequent diseases of the muscular part of the organ are:—

- a. Hypertrophy.
- b. Dilatation.
- c. Dilated Hypertrophy.
- d. Fatty heart.

A heart is *hypertrophied* (*i. e.*, the muscular wall of the left ventricle is thickened) if the dullness extends further to the left than normal, if the heart-sounds, especially the first, are sharp and accentuated, the impulse is heaving and diffused over a larger space than normal, and the pulse at the wrist is strong and full. We generally find, besides enlargement of the liver (safety valve), strong pulsation of the carotids, a florid face, headache, vertigo, dyspeptic symptoms, palpitation and dyspnoea on exertion.

A heart is *dilated* (*i. e.*, its muscular walls, especially those of the right ventricle, are in a state of granular degeneration, thinner and stretched, so that the cavities, and here again mostly the one of the right ventricle, are dilated), if the dullness extends on the right side of the sternum, the heart-sounds, especially the first, are very weak, the impulse is hardly felt nor seen, and the pulse at the wrist is small and weak. We have, besides, symptoms of venous stasis; the liver is enlarged, the face often blue or pale, with blue lips, and we find a tendency to fainting, giddiness, dyspnoea, dyspeptic symptoms, passive congestion of lungs, and dropsy.

A heart is in the state of *dilated hypertrophy* (*i. e.*, its muscular walls are thicker and its cavities dilated), if the dullness extends further than normal on both sides, if the sounds are accentuated, the impulse is stronger and diffused, and the pulse at the wrist is weak. The accompanying symptoms will depend upon the fact if the

hypertrophy or the dilatation is predominating, and upon the underlying disease, as *morbus Brightii*, etc.

A *fatty* heart (*i. e.*, when its muscular fibres have undergone fatty degeneration), you recognize, gentlemen, by the normal or even diminished area of dullness, by the great weakness of the heart-sound, the first being frequently not heard, and by the very weak impulse and pulse at the wrist. Then you have degeneration of the coats of the vessels and evidence of fatty degeneration somewhere else, as in liver and kidney.

As regards *valvular* lesions, now, you must, gentlemen, first impress upon your memory the places at which we hear best the play of each valve. They are as follows: A little above and inside of the left nipple the *mitral valve*; just above the ensiform cartilage, over the sternum, the *tricuspid valve*; at the left border of the sternum, where to the latter the cartilage of the second rib is attached, and at the lower edge of the rib, the *semilunar valves* of the *pulmonary artery*; and over the second interspace, near the right border of the sternum, the *aortic valve*, therefore, between the second and third rib on the right side.

I told you, gentlemen, to make yourselves at first thoroughly acquainted with the two normal sounds heard at each valve. I will add one point: the sound which takes place synchronously with the pulse at the wrist is the first sound of the heart, mainly produced by the contraction of the ventricles, while the other sound, which you hear between two beats of the pulse, is the second, caused mainly by the closure of the *semilunar valves*. Whenever, gentlemen, you are in doubt which is the first and which the second sound, feel the pulse at the wrist while auscultating the heart.

The first question to be answered now is: How do we recognize the existence of a valvular lesion? By a murmur, *i. e.*, by an abnormal sound taking the place of one or both normal sounds of the heart. Though there are all kinds of murmurs, if you once have listened carefully and heard distinctly an organic murmur, as you will have opportunity here to-day, you will always recognize it again. But, suppose you have detected a murmur, is this definite proof of the existence of a valvular lesion? No, gentlemen, there are also functional murmurs. For practical purposes you only need to remember two such, the anaemic blood-murmur and the murmur of an excited, overacting heart. If a very anaemic person comes to you, and you listen over the base of the heart, you will find there,

and only there, a soft murmur, which will disappear under large doses of iron. If a strong, healthy individual appears the first time before you for examination, his heart may be acting, perhaps, very excitedly, and then you may hear over the left ventricle a murmur, which will disappear if you permit the person to rest for about five minutes in the recumbent position, or if you quiet the heart's action by aconite. From this you can draw the conclusion yourselves, gentlemen, that a functional murmur is not constant, while an organic murmur, as a rule, if once there will be there forever; at least by no agency of yours can it ever be removed, except, perhaps, if due to syphilis. Besides, an organic murmur is harsh and loud, often musical or rasping; a functional is soft.

Having established to your satisfaction the existence of an organic murmur, therefore, of a valvular lesion, what step do you take next? You have to find out which valve produced the murmur. And here, remember this: The valve over which you hear the murmur the loudest is the affected one; the place where the murmur is most intense divides, therefore, the seat of the lesion. You may find two points of greatest intensity of the murmur. In that case two valves are diseased. After having in this way determined which valve is affected, you have to decide what kind of lesion does exist. For practical purposes we recognize two separate affections of the valves of the heart. A valve may have become torn, or a part of it formed adhesions, so that the valve cannot close tightly, and does not shut sufficiently to allow the blood to flow back, to regurgitate. In such a case we speak of insufficiency, or more generally of *regurgitation*, of that valve. If a valve has become narrowed by calcareous or other deposits, or by any inflammatory processes, then we have narrowing, or as it is called technically, *stenosis* of a valve. To enable you now to say if you have regurgitation or stenosis of that valve, of which you have detected that it is the seat of a murmur, I give you the following rule, which holds good for all practical purposes: A murmur which you hear strongest at one of the two lower valves (mitral and tricuspid), instead of the first sound, denotes regurgitation of that valve; if it replaces the second sound at one of these valves you have stenosis of that valve, and exactly the opposite is the case with the two upper valves (the semilunar valves of the aorta and pulmonary artery). Here a murmur replacing the first sound signifies stenosis, and one taking the place of the second sound denotes regurgitation.

You will admit, gentlemen, that this is very easy, and if you impress this rule fully upon your memory, you will always be able, to make a diagnosis of a valvular lesion, and be prepared to study the exceptions. You establish, therefore, first the existence of an organic murmur, then find out its seat of greatest intensity; to know which valve is affected, and at last you decide; if the murmur replaces the first or the second sound, to know if you have stenosis or regurgitation, and your diagnosis is made. I may add, that a murmur which you hear instead of the first sound is often called a systolic murmur, and the one taking the place of the second sound, a diastolic or presystolic murmur.

A few general remarks only about the treatment: In cases of uncomplicated hypertrophy of the heart try to remove cause, as certain occupations, etc., pay attention to all the secretions of the body, keep the patient, if possible, a long time in the recumbent position, allowing him only a diet sufficient to sustain life, and give him internally one minim of the tincture radicis aconiti, three times daily, until you have reduced the form of the impulse to the normal. In cases of dilatation, the great tonic of the heart, digitalis, is indicated; otherwise our treatment must be governed by the concomitant symptoms. As regards dilated hypertrophy, I can give you no general rule; you have to treat here the underlying disease, and the accompanying circumstances must teach you if quinine, belladonna and digitalis (remedies which, combined, are frequently employed to regulate the heart's action) are to be given, or if aconite, besides attention to the secretions, is indicated. All will depend upon the fact if the hypertrophy or the dilatation is predominating. For a fatty heart, strychnine and iron are the best remedies.

Do valvular lesions of themselves ever give us any indications for treatment? Only very little, gentlemen; mostly it is only of interest for us as regards diagnosis and prognosis to know what peculiar valvular lesion we have before us. Affections of the aortic valve are apt to terminate abruptly, producing instantaneous death; while lesions of the mitral valve, and still more those of the tricuspid valve, usually wear the patient out by dropsy, and especially the latter by all forms of venous stasis and the greatest possible dilatation. Disease of the pulmonary valves, in almost all cases inborn, gives rise to pulmonary complications, relieved by cupping, etc. We may further say, in general, that digitalis is of benefit mainly in mitral affections, while for aortic lesions the bromides have a good effect.

When mitral lesions are near their fatal termination, and digitalis seems to do no good any more, morphia will often be of great use. But if valvular affections of themselves give us little indication for treatment, what then shall guide us? The accompanying hypertrophy or dilatation, gentlemen. In every affection of a valve one of the ventricles must gradually either become thicker and stronger in its muscular walls (hypertrophy), or its cavity must enlarge by the stretching of the walls (dilatation), or both must take place to a certain extent (dilated hypertrophy), to compensate for the disturbance of circulation, brought about by the valvular defect. For instance: The aortic orifice is narrowed; the left ventricle receives, notwithstanding, the same volume of blood as before the valve was affected, and at the same time the ventricle must push the same volume of blood forward, but now through a narrower opening. What must take place? Its force being increased, its activity greater, the muscle of the left ventricle will follow the law which all muscles obey under similar circumstances: it will enlarge. As long now, gentlemen, as this hypertrophy does not overstep the limit which it has to reach, to be able to carry on the circulation under the altered circumstances just as formerly, the enlargement will be a compensating hypertrophy, and so it is called. And, gentlemen, as long as we have a compensating hypertrophy or dilatation we must leave the heart alone, and give no medicine whatsoever to influence its action; but as soon as either condition oversteps the limits of compensation we may use in the first case aconite, and in the second digitalis, either to reduce or increase the force of the organ. In a valvular lesion the accompanying degree of hypertrophy or dilatation indicates, therefore, the treatment. Certainly, this has reference to the heart alone; the treatment of the underlying disease, as rheumatism, gout, syphilis, or morbus Brightii, etc., has nothing whatsoever to do with the question before us.

To recapitulate, gentlemen: Having made ourselves thoroughly acquainted with the normal sounds of a healthy and the murmurs of a diseased valve, and with the normal area of percussion dullness, we decide, when examining a patient's heart, first, if we have a functional or organic affection of the heart before us. In functional complaints the size of the heart is normal, and so are its sounds, except in great anæmia, when we hear at the base of the heart a soft murmur, disappearing under large doses of iron, and except under great excitement of the organ, when we perceive a murmur over the left

ventricle, which ceases when bringing the patient in the recumbent position, or under the influence of aconite. Suppose we have no functional, but an organic disease of the heart. Then we percuss first, to detect if and on which side the organ is enlarged, note how loud the sounds of the heart are, and observe the strength and area of the impulse, and feel the pulse at the wrist, so that we may diagnosticate hypertrophy, dilatation, dilated hypertrophy, or a fatty heart. This done, we listen for an organic murmur. Having perceived such, we decide its seat of greatest intensity, to know which valve is the affected one; and then we note if the murmur replaces the first or the second sound of the heart, to enable us to say if we have to do with stenosis or regurgitation of the diseased valve or valves, or, may be, with both. The indications for treatment are given by the condition of the muscle of the heart.

I shall now, gentlemen, illustrate to you on the living body what I explained to you.

AORTIC STENOSIS AND MITRAL REGURGITATION.

You see here, gentlemen, a little girl, Emma N—, 6 years old, who seems to be very irritable. Her mother tells us that the child had, two years ago, acute articular rheumatism, and that it complained during this illness a great deal of pain in the chest, and had much difficulty in breathing. Since then the child has never been well; it is very fretful, starts often during sleep, and seems to suffer from pain on the left side of the chest very frequently. Besides, the mother informs us she cannot allow the child to run about with its playmates, as it immediately suffers from shortness of breath, and its heart is beating so strongly that the mother is sometimes afraid that the organ would break through the chest-wall. The hour drawing near its close, I shall to-day only examine the heart of our little patient. Looking at the left side of the chest, the region of the heart seems to be bulging out a little; you observe, further, how heaving and how diffused over several interspaces the impulse is; percussion shows a slight increase of the area of dullness at the base and towards the left side, and the pulse at the wrist is hard and strong. We have, therefore, here, so far—what? "Hypertrophy of the heart." Correct, and we will now listen to the sounds of the organ. I perceive a very loud murmur, which takes the place of the first sound; and auscultating carefully, I find that there are two points of greatest intensity—one near the left nipple, and the other, harsher, different in character from the first, near the junction of the second rib with the right edge of

the sternum. This indicates an affection of what valves? "The mitral and aortic." Perfectly correct; and as I told you that both murmurs replace the first sound, we have what lesions? "Regurgitation of the mitral and stenosis of the aortic valve." Very good. The increase of dullness at the base shows us, I think, enlargement of the left auricle, so that at present one lesion seems to compensate the other, and as, considering the valvular disease, the hypertrophy must be taken for compensating also, we shall only order rest and avoidance of all excitement, regulate the bowels by an occasional dose of castor oil, and apply an emplastrum belladonnae over the heart, to ease the pain. Should the heart continue to act as excitedly as now, we shall give the child, in addition, half a drop of the tincture of the root of aconite, three times daily.

REGURGITATION OF THE MITRAL VALVE.

Our second case is this little boy, kindly sent to us by a colleague. The boy's name is John B—, and he is nine years old. He looks very pale, and complains of beating in his chest when walking fast, and of general weakness. Looking at the boy's chest, we find the sternum very prominent. We observe further (and very nicely in this case, on account of the thin chest walls), the impulse in the fifth interspace; it is a little stronger than normal. The pulse at the wrist is strong, but not full. Percussing the region of the heart we find a tympanitic sound over the forward-pushed sternum, which shows us that this condition is not due to an enlarged heart, or a tumor, or aneurism, but that the boy has what is called a chicken breast, about the cause of which I shall speak at another time. The area of dullness extends a little further left than normal, and we have evidently some hypertrophy here. Auscultating, I hear a harsh murmur replacing the first sound, and find it loudest and ending with almost a musical sound near the nipple—somewhat to the left of it. We have, therefore, here an affection of the "mitral valve," and what lesion? "Regurgitation." The hypertrophy is here merely compensating, and besides rest and regulation of the diet we shall only prescribe iron to improve the boy's blood.

FUNCTIONAL AFFECTION OF THE HEART.

This lady, Mrs. Jane M., thirty-nine years old, complains of pain in the left side of the chest and frequent palpitation. We learn, besides, that she has a capricious appetite, is constipated, that she feels after eating a sensation of weight in the epigastrum, that she belches often, and that she suffers occasionally from shortness of breath. Her tongue is flabby and indented by

the teeth. On percussion we find the area of dullness over the heart to be normal, and, on auscultation, that the same is the case with the sounds of the heart. Only the impulse is a little excited and irregular. What affection of the heart have we here? "A functional disturbance," due to dyspepsia. We shall order the application of an emplastrum belladonnae over the region of the heart, to remove her pain, put her on a diet of milk and toasted white bread, and give her of the following mixture a dessert-spoonful, in half a tumblerful of water, three times daily, one hour before each meal:

R. Sodii bicarbonatis, 3 ij
Tinctura nucis vomice, f3 ij
Tinctura gentian comp.,
Tinctura rhei simplic., aa f3 ij. M.

Sig.—Shake well.

When she comes to our clinic again, in a week from to-day, you will find that her heart symptoms have totally disappeared and her dyspepsia has much improved.

Gentlemen, I thank you that you have listened so patiently, though the hour is over some time ago. I hope you will impress upon your memory what I explained to you to day. In my didactic lectures I shall tell you the exceptions to the rules given above, and describe to you the diseases of the membranes of the heart.

COMMUNICATIONS.

THE DIGESTIVE PROCESS IN INFANCY.

BY THOS. S. SOZINSKY, M.D., PH. D.,
Of Philadelphia.

In a lecture delivered recently in one of our leading medical colleges, many of what seemed to me to be very questionable statements about remarkable physiological and other features of infantile life were made, among which were these: that for three months or so after birth the salivary glands do not perform their function, and that for a similar period the stomach is merely a receptacle for food and not a digestive organ. Such statements as these finding deliverance in such a place, a place where one should expect to hear only the truth, and truth precisely stated, would seem to be confirmatory of the allegation made by the professor, that far too little careful attention is as yet given by physicians to the subject of children in health and disease, a branch of medicine, truly, about which there is much room for increase of knowledge, as well as to which far too little attention is generally given.

The two statements quoted and several related

ones have suggested the remarks which follow. And here, I cannot refrain from saying that not only the points to which I refer, but all others about the nature and management of children should be thoroughly studied by physicians. The subject is obviously deserving enough. Medical men who take a warm interest in all pertaining to the young, cannot fail to be instruments of inestimable value to the race. Statistics of premature mortality and other evidences of degeneracy are very indicative of the pressing need there is for such interest, of the need there is for an improved science and art of child rearing.

The idea that there is an absence of the salivary secretion in early infancy, is likely familiar to all reading physicians. Not so, however, the idea that the infantile stomach is a passive pouch; this one is doubtless novel to very many. But at any rate, if for no other sake than that of truth, it is to be hoped that the former is not, and that the latter will not become, firmly fixed in any one's mind.

Now, if it be, as every physician must have heard asserted frequently, a fact that in the absence of saliva starchy articles of food cannot be digested, it follows that starchy foods cannot be digested by infants, they being void of that secretion. This is a common belief, and naturally it is regarded as worthy of attention practically by practitioners of consistent ideas. Of course, it would be all wrong to have an element in the diet which cannot in the nature of things be digested. But if the stomach of a child under three months of age is only a passive pouch, what then? Knowing that it cannot digest anything, should we not maintain that it is both illogical and mischievous to put anything into it? Evidently all other as well as amylaceous articles of diet must fail to be digested, if the power of digestion is wanting. One is forced to arrive at this conclusion, unless some article, or articles may enter the system and nourish it without undergoing any digestive change.

In accordance with his declaration that the stomach of an infant is void of digestive power, the professor in question expressed the idea that the natural nourishment in infancy, namely, the mother's milk, does not undergo any digestive process before entering the system. In other words, milk is a food which calls for no digestive change, or perhaps I should say that the milk yielded for the first three months or so after childbirth calls for no digestive change. It enters the system as does water; it requires the preparatory action of neither gastric juice nor anything else.

Common sense alone should lead one to question the truth of all this. I do not believe that there is an absence of saliva during the first three months of life, and I am equally sure that before a child is three months old its stomach is something more than a mere pouch. Consequently, even if I take it as a fact that starch cannot be digested without saliva, I have reason to believe that it is possible for an infant to digest, at any rate in a measure, starchy or other items of diet besides the natural food. Nor can I believe that the milk, during the first three months after childbirth, calls for no digestive change.

If the salivary glands of infants do not secrete any saliva, my observational powers are utterly deceiving. It is apt to even flow freely from the mouth of a properly developed child before the completion of the third month. Saliva is secreted from birth forward, and every one can readily collect it for his own inspection, or for experiment, by placing a piece of sponge in the mouth. It would be somewhat irrational to hold that none of it is formed from the start. An infant is indeed a frail creature, but the laws of nature are not so unwise as to bring the young of the human species into the world with even the mere vegetative or organic functions in a state of utter imperfection. One may safely affirm that all ordinary functions, animal as well as organic, mental as well as physical, are sufficiently developed to begin to act more or less perfectly from the moment a healthy child is born. Each and every one of them grows more perfect by degrees. But years serve merely to make them more perfect. The whole digestive process is essentially similar in infantile life to what it is afterwards. It is in power chiefly that it differs. I take it as a fact that the saliva is very much less profusely secreted immediately after birth than later, and doubtless, too, its capacity to transform starch into sugar is less. In brief it may be said that the digestive power of the stomach, and indeed the whole alimentary tract, is comparatively feeble at first.

Just how profuse the saliva is at any period it is probably impossible to find out, or rather, I should say, the secretive capacity of the salivary glands at any period it is impossible to find out. As the sense of taste develops it doubtless increases greatly. The character of the food used has much to do with the amount formed. The use of solid articles calls forth much of it; for which and other reasons, by the way, it would seem that not the least important end, perhaps the chief end, of it is to soften and lubricate the food. Indeed, Bernard and others maintained that it

served no chemical purpose. At any rate, it is certain that more than a little of the starchy matter consumed is not transformed into sugar before reaching the stomach. The pancreatic and various intestinal secretions have much to do in carrying the process to, or approximately to, the point of completion.

Different features of the salivary secretion in early life have been carefully studied by several competent investigators. Dr. A. Jacobi, of New York, advertises so comprehensively, and at the same time briefly, to the matter, in his excellent contribution on infantile hygiene, in the recently published "Cyclopaedia of Hygiene and Public Health," edited by Dr. Buck, and what he says is so deserving of attention that I will give it essentially as stated by him. He remarks that after a number of experiments and statements made by Bidder and Schmidt, Ritter von Rittershain, Jörg and himself (Korowin experimented for the purpose of comparing the effects of the salivary glands with those of the pancreas), he treated starch with infusions of both the pancreas and the parotid glands. He found that the pancreas is capable of transforming starch into sugar at a later time than the parotids. No such effect was exhibited by the pancreatic infusion in the first month, but a noticeable one in the second, and a reasonable one in the third. At the end of the first year the diastatic effect of the pancreas is fully developed. The parotid infusion, however, is effective from the first day of life, particularly in well-developed infants. Small pieces of sponge were introduced into the baby's mouth, and withdrawn after awhile. It took from fifteen to twenty minutes to collect a cubic centimeter of saliva in the mouth of infants of from two to four weeks, the tenfold time of what was required in infants of three months. Now and then the secretion would stop, after having been distinctively active for a little while. Seventeen babies of from one to ten days yielded a diastatic saliva. The number of his qualitative experiments amounted to one hundred and twenty. The diastatic effect of the saliva of an infant of eleven months was as marked as that of his own. He also published the results of a second series of experiments, which were of similar import. The conclusions of another investigator (Zweifel) are the same, but, in addition, are illustrative of certain morbid conditions. The infusion of the submaxillary gland of a young infant yielded no transformation of starch into sugar after an hour's contact. An infusion of the parotid of a baby of seven days proved effective after four minutes; that of an infant of

eighteen days, who died of gastro intestinal catarrh, and that of a fetus of the ninth month after forty-five minutes. No diastasis was produced by the parotids of a prematurely born child dead of diarrhea and debility, of a fetus of three months, and of one of four months.

Dr. Jacobi concludes that "age, development, or sickness, with diminished amount of fluid, is of great moment in changing the diastatic effect of the salivary glands."

From what precedes, it would appear that young children are capable of digesting starch to some extent at least. As a matter of fact, it has been given to many in greater or lesser quantity time out of mind. From the statements made, it follows that some of the diastatic element is present from the very start. Dr. Jacobi holds that "from the first days of life starch, in small amounts, can be digested; that in a few months after birth such vegetables as contain starch in moderate but not overwhelming percentage may be used as additional infant food." On this subject Dr. J. Lewis Smith, in his contribution to the recent work, "The Sanitary Care and Treatment of Children and Their Diseases," says: "It seems now established that young infants can digest starch, though not to the extent of those who are older." Let it be borne in mind, however, that the power of different children of the same age to digest starch, or any other article of diet, is far from being equal—a matter of great importance in their dietetic management.

In this connection it is proper to say that the salivary and pancreatic secretions, pure and simple, are not, as Liebig and others have proclaimed, the exclusive sources of material which transforms starch into dextrine and glucose. It has been shown that the mucous membranes of the mouth and other parts of the alimentary tract furnish a ferment which is productive of the change. Indeed there is some reason to believe that the diastatic power of at least the secretion of the salivary glands is not much greater than that of the other secretions of the mouth. As bearing on this, it is worth while to transcribe the following suggestive extract from Dr. Pavy's book, "Digestion and its Disorders": "Neither the pure secretions from the different salivary glands, nor the admixture of these in the case of the horse and dog, enjoy the power, when fresh, of transforming starch into sugar. It is true, after they have been kept a few days, that they enjoy it, but in this there is nothing especial, the property being one that is common to organic fluids in general in a state of change. The mixed saliva of these animals, however,

that has been derived from the cavity of the mouth is found to possess a transformative power, although of nothing like as strong a nature as that enjoyed by our own."

As regards the digestibility of the mother's milk, I may remark that there can be little doubt but that it is easier of digestion for a few months at the beginning than later, a fact which should not be forgotten in choosing a wet nurse. Except for a limited time at the start it is obviously much thinner at first than afterward. But there is no reason whatever to believe that it undergoes a radical change of character within three months. At any rate, cases are familiar to me, and doubtless to all other physicians, in which cow's milk has been used from birth forward; from which it follows that the infantile stomach can digest other than the fresh milk of the mother.

Now, although it is certain that a child under three months of age can in a measure digest almost any ordinary article of diet, I do not advise any one to insist that it should do so. The mother's milk is the best food, infinitely the best food for it, and the only kind of food which it should get until it has passed its third month, nay, its eighth or ninth month. Soups, preparations of beef, or anything, including even cow's milk, should not be given to an infant, except the mother cannot by an ordinary, or if necessary an extraordinary effort on her part, afford it nourishment, and nourishment, too, which is both good in quality and sufficient in quantity.

In that interesting compendium of ancient medicine, "Paulus Aegineta," it is said, "The child may be brought up upon milk until it is two years old, after which its diet may be changed to food from grain." Hebrew women, we are informed, gave their children breast-nourishment two years, and Mohammedan mothers are enjoined to do so by the Koran. But, although a child under two years should get plenty of milk, it is not at all necessary, or wise, to deny it all this time vegetable food or animal food either, or to confine it to milk of the mother; beyond question milk should be the main item of diet, and not of children under two only, but of those much older also. It is, perhaps, in connection with milk, in order to render it easier of digestion, that any starchy or mealy preparation is chiefly serviceable to very young children. However, it is undoubtedly a fact that the system may, though at great risk of harm, become habituated early to the use of almost any kind of fare; every one must have observed this.

Nevertheless, it may be affirmed that, as a rule, starchy articles cannot be digested readily and well, nor can meals of any kind either, until considerably later than the eighth or ninth month, until from twelve to sixteen teeth are present. Any one can easily verify this by experiment. No doubt, some starchy articles are digested better than nitrogenized meals. The adult finds light, starchy articles comparatively easy of digestion, and so does the child. Of course, the question of the amount and kind of nourishment yielded by the one or the other is quite another matter.

HOSPITAL REPORTS.

UNIVERSITY HOSPITAL.
CLINIC OF JOHN ASHURST, JR., M.D.,
Professor of Clinical Surgery in the University of Pennsylvania.

(Reported by CHARLES S. DOLBRY.)

Diastasis of the Manubrium.

CASE 1.—I shall first bring before you to-day, gentlemen, a case of injury, the diagnosis of which is not perfectly clear. This man being seized with a fit or convulsion while employed upon a trestle-work, fell and struck upon an iron steamer passing below. As you observe, his whole face, and the left side and the front of his chest, are red from excessive contusion. The injury the presence of which I suspected when I first examined the patient was a dislocation or diastasis of the manubrium; but this may prove not to be the case, although there was and still is a decided depression at the upper end of the sternum, together with a sensation as of effused liquid, probably blood. This form of injury is a comparatively rare one, and it is necessary to diagnose between diastasis and fracture.

Diastasis is usually produced by indirect violence, as by a fall upon the back; it may also result from the excessive muscular action accompanying vomiting or labor pains. Fracture of the sternum, on the other hand, is commonly produced by direct violence. You may infer the presence of diastasis and the absence of fracture, when the upper portion of the sternum is found below the rest, for in fracture the lower piece is usually found driven back behind the upper fragment. You should however always suspect the possibility of congenital deformity, and avoid mistaking this for diastasis or fracture. The prognosis is more favorable in diastasis. In fracture you may have serious injury of the thoracic viscera, or, at a later period, abscess in the anterior mediastinal space.

Occasionally there has been found a true joint between the manubrium and gladiolus, and it is from this circumstance that the term dislocation is sometimes used. Commonly, however, there is a simple separation or diastasis. There being no emphysema we would infer that the lung has escaped being torn and that there is no communication with the air passages; and this, with the fact that the lower rises above the upper

fragment, leads me to suspect that, in this case, we have a diastasis of the manubrium. In doubtful cases it is best to treat the patient as if the more severe injury had been received, and if at length it turns out that you have been mistaken, and the character of the injury is not so severe, you have at any rate done no harm. Hence we will treat this case as if certain that the suspected injury was present. We will apply a compress at the juncture of the sternal bones, and hold it in place by means of broad, adhesive strips.

If the deformity is very great in a case of this kind, you may facilitate its reduction by placing a pillow beneath the back, so as to render the front wall of the thorax prominent, and aid in bringing out the depressed portion of the sternum. Use no more violent means than this, however. I do not advise the old method of drawing the depressed bone forward by means of a hook or gimlet.

Deep-seated ecchymosis coming on after six or seven days, and evidently due to leakage from below, would give us evidence of injury to the deep tissues, and would tend to confirm a diagnosis of fracture.

Hydrocele of Spermatic Cord.

CASE 2.—Our next patient is a little boy with hydrocele of the cord. This might be mistaken for a hernia or for a retained testicle. The latter case would easily be recognized by the absence of the gland from the scrotum, and we may eliminate the former by invaginating the scrotum with the finger and showing that the inguinal canal is clear. This tumor has the elastic, fluctuating appearance of a fluid, and would possibly show some translucency if examined in a dark room. The lower portion of the vaginal process of the peritoneum constitutes the tunica vaginalis testis, while the upper portion ordinarily becomes closed and forms an investment for the cord; but complete obliteration of this portion does not always occur, a space sometimes remaining open in which fluid accumulates, constituting hydrocele of the cord. By the use of an evaporating lotion of muriate of ammonium, five grains to the ounce, we may often cause this swelling to go away, but in this case it has failed. I will therefore introduce a very delicate trocar—without, however, as you see, obtaining any fluid. This is due probably to its being of a viscid character. Simply puncturing the cavity may possibly effect a cure. There is one circumstance which we must bear in mind, and that is that fatty tumors are sometimes met with on the cord. I do not know of any method of positively diagnosing between hydrocele of the cord and tumor of the cord before operation.

Malignant Sarcocele.

CASE 3.—We have next, gentlemen, a man past middle age, having a tumor of the right testicle, extending for some distance up the cord. It is to be distinguished from ordinary hydrocele, first, by its shape, which in hydrocele is pear-like, the long axis corresponding to the long axis of the body, but here the greatest size is at almost right angles to the body; it is also quite hard, and very heavy in proportion to its bulk. A hydrocele of the same size would not be so heavy. Its general appearance, rapid growth, the fact

that there has been little pain accompanying it, its weight, the hardness and implication of the cord, together with the age of the patient, all tend to confirm the opinion that it is a tumor of the testicle, probably of a malignant character. To show whether it be a sarcomatous or carcinomatous growth, we must have recourse to the microscope. The mode of distinguishing between these depends upon the fact that in sarcomatous growth we always have an intercellular substance, and cells in immediate relation to this intercellular substance.

In schirrous growth, on the other hand, we have a distinct stroma, which is often confused by students with the intercellular substance of the sarcomata, and in the meshes of this stroma the cells are closely packed together. Sarcoma, especially when it affects the testicle, is fully as malignant as any carcinoma, but a sarcoma situated in bone tissue is not such a rapidly destructive disease as carcinoma in the same position.

The only treatment which offers the slightest hope of benefit in a case of malignant sarcocele is removal of the growth. If we were sure that the disease was limited to the testicle itself, we might remove the gland without the tunica vaginalis, but it is a safe rule, in any case of doubt, to remove the coverings of the gland as well as the gland itself. We first dissect off the scrotum, making a single longitudinal incision, and then carefully trace up the cord until healthy tissue is reached. The cord may be ligated as a whole, or the arteries be taken up separately, or we may divide the structures with the *écraseur*. An advantage to be gained by the use of this latter method is that there is less shock than when the cord is cut with the knife. The operation of castration is always attended with great shock—greater than would be supposed from the apparent magnitude of the operation.

As you see, on removing the growth from the scrotum, I leave, apparently, a very large wound, but this will speedily contract, and the wound will be comparatively small. I have kept the edge of my knife turned toward the gland, so as not to destroy too much of the vascular connection of the scrotum, as it might slough if not left with sufficient blood supply. This operation is much more rapid when the tumor is removed without the tunica vaginalis, but as I have already remarked it is much safer to remove the tunics with the gland when we suspect the growth to be malignant. On getting above the indurated portion we will pass a strong ligature through the cord above the point at which we divide it, leaving a loose loop by which we can control the upper end of the cord, and draw it down at any time to arrest hemorrhage. As soon as the *écraseur* begins to bind, we proceed slowly, that we may divide the cord without hemorrhage. I find the best plan is to make two or three rapid jerking turns, then wait a while until the tension is somewhat diminished, and again make rapid turns, separating the cord by jerks as it were.

Chassaignac, the inventor of the *écraseur*, admired it so much, that he performed all operations with it, including amputation of the thigh and lithotomy. Gynæcologists often use it in the removal of uterine tumors, employing a wire instead of the chain, but the chain is not so apt to

break as the wire, and makes a more contused wound, in which there is not, I think, so much liability to secondary hemorrhage. I prefer the chain, also, to the galvanic *écraseur*, the use of which is apt to be followed by secondary bleeding. It is almost impossible to get primary union of the scrotum, as it is constantly expanding and contracting and is in this way so much disturbed that it seldom unites by adhesion, but does so by granulation in a much shorter time than you would suppose.

MEDICAL SOCIETIES.

THE INTERNATIONAL MEDICAL CONGRESS.

(Continued from p. 462.)

Section on *Materia Medica and Pharmacology*.

An important discussion took place on the introduction of

AN INTERNATIONAL PHARMACOPEIA.

As the result of an exchange of views, a committee was appointed "to coöperate with a committee appointed by the International Pharmaceutical Congress to prepare a compilation in which the strength of all potent drugs and their preparations is equalized." The following are the names of this committee as far as provisionally chosen: Great Britain, Professors Fraser and Lauder Brunton; France, Professors Dujardin-Beaumetz and Vulpian; Germany, Professors Rossbach and Eulenburg; Austria, Professor Schroff; Russia, Professors Botkin and Dogiel; Holland, Professors Stockvis and Fokker; Switzerland, Professor Prevost; and the United States, Professors Wood and Flint.

Professor Plugge read an interesting paper on the alkaloids known as

ACONITIA.

M. Petit, Mr. Carteighe and the President took part in the discussion that followed upon the subject, and the general consensus appeared to be that, inasmuch as the alkaloids derived from *Aconitum napellus* and from *Aconitum ferox*, respectively, are by no means of equal strength, it is highly desirable that a tincture of the former root should be ordered, and not any preparation of the active principle.

PHYSIOLOGICAL ANTAGONISM.

The discussion on this subject was opened by a paper from Professor Wood, of Philadelphia. All functional activity being the result of molecular movements in living protoplasm, all active remedies must either chemically unite with the protoplasm, or alter the character of these movements. We might expect to find forces antagonistic in their action on the organism, as we find them everywhere in nature. Most substances, indeed, which quicken molecular action at first, end by arresting it. Dr. Wood referred to Professor Prevost's distinction between antidotism and antagonism, a physiological antidote relieving symptoms that cause death, whilst a physiological antagonist acts in direct opposition to some other substance (chloral and strychnia). The treatment of disease by

antagonism is as much possible as the antagonistic treatment of poisoning. But inasmuch as the action of a "disease" poison is complex and obscure, we have, as a rule, to fall back on antidotal treatment (*i. e.*, the treatment of symptoms), and wait for the elimination or destruction of the disease poison. Bearing in mind the distinction between antagonism and antidotism, the mixed falsity and truth of *similia similibus curantur* is seen. "Allopathy" is no more true than "homeopathy," but the law of antagonism is of wide applicability in therapeutics, and its range must continually increase.

A paper on

PILOCARPIN

was read by Dr. William Squire (of London), which dealt very fully with the physiological action, and especially with the therapeutical applications, of the new remedy. Dr. Squire prefers to use the muriate of pilocarpin in simple solution, one grain to fifteen minims of water for hypodermic injection, one grain to four ounces of water for internal use, one-third of a grain being the largest and one-fifteenth of a grain the smallest dose required. A full dose should be given at once. The principal use of pilocarpin is in some cases of diphtheria and the different kinds of Bright's disease. Dr. Huchard, of Paris, recommended great caution in the use of pilocarpin in Bright's disease when the heart was threatening to give way. He had observed the greatest benefit from its employment in polyuria, and a certain amount of good in cases of sweating in phthisis. Dr. Jacobi, of New York, said that perspiration without introduction of water into the system being dangerous, it was necessary in Bright's disease to combine the use of pilocarpin with injections of water per rectum. Dr. Jacobi also indicated the class of diphtheritic cases in which pilocarpin was of some value. Professor Quinlan, of Dublin, did not fear so much the action of pilocarpin as a cardiac depressant. Mr. Gerard and Mr. Martindale spoke on the subject of

VIVISECTION.

The following resolution was adopted by the whole Section, with one dissenting voice:—

"The Section resolves that, in their opinion, advancement in the knowledge of the action of medicines, in the present state of science, cannot be obtained without experiments on the lower animals."

ON THE REMEDIES USED TO PROMOTE ABSORPTION OF INFLAMMATORY AND OTHER MORBID PRODUCTS.

Dr. Dujardin-Beaumetz read a paper on this subject. He said that, rightly to estimate the value of therapeutic interference in the circumstances indicated, the changes that normally occurred without it must first be considered. The living cell was the theatre of a continual integration and disintegration, the materials for which were supplied by the blood and lymph. Under irritation, it only underwent visible alterations, often in the direction of inordinate development. After a time, however, this pathological activity usually came to a stop, and the abnormal elements produced might gradually disappear: first, by the removal of corpuscular elements, still

in an early stage of organization, by the lymphatic circulation; secondly, by fatty or granular degeneration of the newly formed elements, and the subsequent absorption of the detritus thus produced; lastly, by fibroid elements taking the place of the embryonic tissue, and choking its further development. Sometimes, in the case of serous and mucous membranes, sero-fibrinous effusions were poured out, and were reabsorbed by the capillaries, either unchanged or after undergoing fatty-granular metamorphosis. Lastly, the influence of the nervous system in controlling tissue metabolism must not be left out of account. Therapeutic interference might, to a certain extent, promote the absorption of these morbid and inflammatory products. Medicines designed to favor it had been termed "resolvent." The old pharmacopoeia divided them into "solvent," "deobstruent" and "absorbent" remedies; the first intended to soften the morbid products; the second to facilitate the circulation through the capillary and lymphatic vessels; the third to promote the absorption of the products after they had undergone more or less profound changes. This old classification furnished a very real explanation of the phenomena. To hasten absorption, it was necessary to assist the processes which normally occurred in the diseased tissues; to hasten their return to their embryonic phase, or their fatty-granular degeneration, or the development of the fibroid cicatrical tissue which tended to strangle them. The remedial measures for the promotion of these objects were manifold. Some acted mechanically (compression, massage, etc.); others, of a more active kind, by evulsion (blisters, "solvent" ointments and plasters). Other remedial agents acted still more directly on nutrition, through the nervous or the vasomotor system (the continuous galvanic current, applied to the surface, or by electro-puncture). A destructive action on the morbid products, designed to promote their degeneration and absorption, had been aimed at in other ways (injection of *Corsica papaya* or *papaya* into malignant tumors; toxic injections to destroy the fetus in extra-uterine pregnancy, etc.). Again, the liquid products of inflammation might sometimes be removed by surgical means (pus, sero-fibrinous effusions, etc.). There remained to be considered those medicaments, in the strict sense of the term, which had a solvent action on inflammatory and other morbid products. First, however, the influence of the general nutrition of the body on the nutrition of such product deserved notice. Both augmentation and diminution of nutritive interchange exerted such an influence. The former might cause morbid products to be absorbed by stimulating the functions of the economy (e. g., removal of strumous and lymphatic deposits by appropriate hygienic measures—country air, nourishing food, regulated exercises; these measures increasing the activity of the capillary and lymphatic circulation). Abstinence and disease: productive of malnutrition might achieve the same end in another fashion (autophagy of muscular and adipose tissue; similar action on tumors chiefly made up of fat). A like method had been proposed with a view to the removal of inflammatory exudations into serous

cavities (peritoneum, pleura). Apart from medicines which acted on certain inflammatory exudations (e. g., diuretics and purgatives in pleuritic and peritoneal effusions), and from such as operated by affecting nutrition (e. g., arsenic), there were only two drugs which exerted a real and selective action on the nutrition of such new formations; iodine (including iodides) and mercury. Clinical experience afforded daily proof of their value; experimental research had not yet explained it. These remedies had a selective power over certain products, and not over others which might appear to be structurally identical to them. Thus, syphilitic gummatous, strumous deposits, and tubercles were histologically similar; but mercury only affected the first, iodine the second, while the progress of the third was in no degree influenced by either of the two medicaments. Hemlock and its preparations were formerly in great repute as solvents; notwithstanding the discovery of conia, however, there was still no explanation of this special action of hemlock. It might possibly be due to its influence upon the nervous system. Its true value in this respect deserved further clinical investigation.

ON COLCHICUM AUTUMNALE AS AN ANTIPYRETIC.

Dr. Waterson, of Indianapolis, presented a paper on this subject. He believed that a true antipyretic prevented the production of heat, and that this production was at least controlled by the nervous system. *Colchicum autumnale* possessed a remarkable power, specific in character, over the organic nervous system, apart from its eliminative action, reducing the production of heat, at least temporarily. In suitable cases it was superior to, with wider range and greater power than, any other antipyretic. It was especially useful in all sthenic forms of hyperpyrexia, such as iritis, pneumonia, malarial and other fevers. Dr. Waterson had used colchicum extensively in the form of a wine of the seeds, combined, to avoid disturbance of the alimentary canal, with about equal parts by bulk of camphorated tincture of opium. He gave from one drop every ten minutes, to a newborn child, to half an ounce every thirty minutes, to a vigorous adult in dangerous sthenic hyperpyrexia.

An elaborate paper was read by Professor Böhm, of Marburg, upon the action of medicines upon the heart and blood vessels. The physiological action of *muscarin* and of *duboisia* were subjects of other papers.

ON THE INFLUENCE OF SULPHATE OF QUININE ON GLYCOSURIA.

By Jules Worms, M.D., Paris. The form of disease he described was not diabetes, but he considered it due to nervous exhaustion. He had been led to give quinine, in doses of twenty centigrams, twice a day. He had given it in about thirty cases, continuing it for fifteen or twenty days. This treatment had been invariably followed by marked diminution in the quantity of sugar excreted. Many patients suffering from this disorder spontaneously resume the treatment from time to time, and are conscious of an increase of functional activity while taking the alkaloid; this being coincident with a diminution in the amount of sugar excreted.

ON BROMIDE OF ETHYL.

By W. Squire, M.D., London. Dr. Squire discussed the action of bromide of ethyl as a local anaesthetic, as a general anaesthetic, and as a vaso-motor stimulant or sedative. By rapid evaporation, bromide of ethyl would freeze a limited portion of surface, but it caused insensibility to pain before freezing; and its vapor had the advantage over ether in being much less inflammable, though it is inflammable, as Dr. Squire demonstrated by experiment. It relieved the pain of neuralgia. Long contact with the skin would cause local irritation and vesication. As a general anaesthetic, bromide of ethyl was safe, and did not depress the heart, as chloroform did, or raise the blood pressure like ether. No cough or mucous secretion was excited. Its action was rapid, and recovery is very quick. It might be used by inhalation, short of producing unconsciousness, for the purpose of relieving dyspnoea, spasmodic cough, megrim, and neuralgia in various forms. This remedy might be useful in diagnosis, as it affords no relief to the symptoms of intracranial pressure or hyperæmia, or to the referred pains of subacute or chronic visceral disease. Dr. Squire gave some of the results observed from its employment in the treatment of hysteria and epilepsy.

ON THE UTILITY OF STRYCHNIA AS AN EXPECTORANT.

By J. Milner Fothergill, M.D., London. The experiments of Rokitansky had shown that strychnia was a powerful stimulant of the respiratory centres; and Dr. Fothergill had arrived at the same conclusion from his experiments upon rabbits. When the respiratory centre was paralyzed by aconite, the injection of strychnia exercised a most potent influence in restoring the circulation. He had used it clinically, with much success, when the respiration was embarrassed, in acute bronchitis with difficult expectoration, in chronic bronchitis and emphysema, and when the right ventricle was dilated, it added to the efficiency of digitalis.

Section of Aural Medicine.

Dr. Cassells read the abstract of his paper on "The Aetiology of Aural Exostoses." The chief points of his paper were these: an exostosis is a new growth; a hyperostosis, a hyperplasm. An exostosis appears before complete ossification of the meatus; a hyperostosis is never seen till after complete ossification. They differ from each other in origin, site, shape, structure, and number. He prefers the gouge for the removal of exostosis, the drill for hyperostosis. Dr. Guye believes that multiple hyperostoses never completely occlude the meatus, for as soon as the tumors touch one another they cease to grow, thus leaving a central passage for the escape of secretion.

Dr. Knapp related the result of his examination of 250 skulls of the mound builders; he found exostosis in 44 cases. The condition was supposed to be due to the habit of carrying foreign bodies in the meatus.

On the subject, "Loss of Hearing where the External and Middle Ears are Healthy," papers were read by Dr. Gellé, of Paris; "Physical Diagnosis of Affections of the Acoustic Appar-

tus, with Healthy Middle and Outer Ears," by Dr. Lucae, of Berlin; "On Certain Conditions of the Eyes as a Cause of Loss of Hearing by Reflex Irritation," by Dr. Stevens.

In connection with this subject Dr. Knapp related the result of his experiments on the loss of vision and hearing caused by large doses of quinine. In both the loss was temporary. The objective symptoms in the ear were negative; in the eye he found that the arteries of the retina almost disappeared, the veins were scarcely traceable, and the disc looked atrophied. The field of vision was narrowed on the inner side; light and color perception diminished. The return of sensibility to light passed from the centre to the periphery. Mr. Dalby said he could not doubt that large doses of quinine, long continued, did produce impairment of hearing; while Dr. Jones, of Chicago, stated that he had never seen a case of permanent impairment of hearing resulting from large doses of quinine.

Dr. Fournié read a paper "On the Functions of the Eustachian Tube." He believes that one of the essential functions of the tube is to prevent unpleasant resonance of external and internal noises, and that the muscles which are usually considered dilators are in reality oblitors of the tube; further, that the tube is shut by the tensor and levator-palati muscles, and opened by the palato-pharyngeus muscles and palato glossus. Dr. Rumbull did not agree with the conclusions of Dr. Fournié, but believed that the generally accepted views as to the action of the pharyngeal muscles were correct; and further, he holds that the air in the tympanic cavity is always in a state of slight rarefaction.

Dr. Knapp read a paper on "The Cotton-Wool Pellet as an Artificial Drumhead." Its advantages are: 1. It improves the hearing; 2. It protects the tympanic cavity from the noxious influences of the atmosphere; 3. It promotes a healthy condition of the cavity by absorbing the morbid secretions. He believes it improves the hearing, sometimes by bracing up the inco-malleal joint, sometimes by relaxing the pressure of the stapes on the fenestra ovalis.

Dr. Woakes read a paper on "Paretic Deafness." The chief points he lays stress on in the diagnosis of this affection are: the negative symptoms, as regards the ear; the positive, as regards the palate and faecal regions. In a paper "On the Action of Syphilis on the Ear," Dr. Pierce, of Manchester, noticed that the effects of congenital and acquired syphilis on the ear are less observed than its effects on the eye, teeth, skin, etc. He discussed the question whether the obstinate symptoms of aural syphilis are due to a periostitis of the parts or to a proliferous form of inflammation of the mucous membrane. His summary of the characteristics of acquired and congenital syphilis affecting the ear is as follows: 1. The extreme degree of deafness manifested early in the progress of the disease. 2. The rapidity of the progress and the absence of pain. 3. The early and extreme loss of hearing for the tuning-fork over the vertex. 4. Constancy of the tinnitus. 5. Frequency of simultaneous inner-ear symptoms. 6. Less complete recovery than in simple catarrh.

Dr. Barr read a paper on "Caseous Accumu-

lations in the Middle Ear, Regarded as a Probable Cause of Miliary Tuberclie." Papers were also read by Dr. MacBride, "On Some Difficulties Presented in the Diagnosis, Prognosis and

Treatment of a Certain Form of Middle-ear Deafness;" and by Mr. Arthur Kinsey, "On the Prevention of Dumbness in those Cases where it Follows Loss of Hearing."

EDITORIAL DEPARTMENT.

PERISCOPE.

Treatment of Abscess of the Liver.

Dr. Henry Veale, Assistant Professor of Military Medicine, Netley, writes to the *Lancet* on this interesting subject:—

Considerable diversity of opinion has of late years existed with regard to the best method of treating abscess of the liver. It is agreed that when pus has formed it should be evacuated, if possible; but there seems to be no rule for deciding whether in any given case the evacuation should be effected by aspiration, by the insertion of a large trocar and cannula, with subsequent antiseptic drainage, or by incision under the antiseptic spray, followed by Listerian dressings. That the last-mentioned method is effectual, when it can be carried out, no one will doubt; but it has the disadvantage of entailing a surgical procedure, which may not only require much operative skill, but may also be attended with so much hemorrhage as to be dangerous to the life of the patient. The treatment by the trocar and cannula is easier, but it is certainly painful, owing to the necessity for repeatedly dilating or otherwise enlarging the opening, while the dressings must be conducted with all the care that is required for the method by incision.

The objections to the treatment by aspiration are: first, that there is sometimes a difficulty in withdrawing the purulent matter through the aspirating needle; sec^d d, that the operation must be repeated more or less frequently, and that the constitution of the patient may suffer from the profuse discharge of pus after such repeated tappings; third, that notwithstanding repeated aspirations, the treatment often proves ineffectual, and that incision, or the insertion of a large trocar and cannula, must, after all, be had recourse to in such cases. But to these objections it may be replied that even when the finest of the aspirating needles is introduced into a cavity containing pus, some of the latter will almost certainly flow through it, and it is only when the cavity has been emptied of the more fluid portion of its contents that the needle becomes obstructed. Besides, there is no necessity to restrict oneself to the use of such small needles as the No. 1 or No. 2 in aspirating a liver abscess. A No. 3, or even a No. 4 needle, if of the proper shape, may be employed with perfect safety, and I have never known a No. 4 needle to become obstructed. When the needle has a pen-shaped point it stretches and tears the tissues through which it passes; but if its point is chisel-shaped, as it ought to be, it seldom does any harm, even when of large size. Next, it may

be conceded that, in the majority of cases, an abscess of the liver cannot be cured by one or two aspirations; but I see no reason why the secretion of pus should, on the whole, be greater when the cavity is emptied by aspiration than when it is laid entirely open. Such a cavity must contract and close by slow degrees, even when there is constant drainage; but in this case the discharge soaks into the dressings, and is not measured; whereas when we aspirate we seldom fail to measure the quantity withdrawn, which then makes a great impression on our senses. Finally, it is possible that we may fail to cure a liver abscess by aspiration alone; but if the aspiration has been conducted on sound principles, I believe it will be found to have hastened, not to have retarded the ultimate recovery.

On what principle, then, should the aspiration be conducted? The answer to this question is, that the aspirating needle must be regarded as a substitute for the drainage tube, and it must be inserted as often as the circumstances of the case may require. The abscess cavity should never be allowed to refill to any considerable extent. As a general rule, there is a decrease of pain and of fever after a successful aspiration, and the next aspiration ought to be made before the pain and fever return. Under this treatment the cavity will certainly contract, and may close completely; but even if a cure be not at once effected, a great deal will have been gained, for there will remain only a small cavity instead of a large one to be dealt with when the open method of treatment is had recourse to.

The advantages of aspiration over the open method are its comparative painlessness, the ease with which it can be performed, and its applicability to all abscesses, irrespective of their site or direction; whereas the open method is suitable chiefly, if not solely, for those abscesses which point towards the anterior abdominal wall, and scarcely at all for those which form on the upper surface of the liver, and point towards the right lung. It is not always easy, in cases where fluctuation cannot be perceived, to decide whether or not an abscess exists. Edema around the lower intercostal region on the right side, immobility more or less complete of the right lower ribs, pain in the shoulder or between the scapulae, inability to lie on the left side, absence of the special signs of pleuritic effusion, and the antecedents, are the diagnostic points of chief importance. Dr. Hammond, of New York, has recently stated that when abscess exists, fluctuation can usually be perceived by placing two fingers of the left hand in the eighth intercostal space on the right side, a little in front of the mid-axillary line, and gently percussing with the

fingers of the other hand a little above and to the right of the umbilicus. I have tried this method on many occasions where abscess, pointing upwards towards the thorax, undoubtedly existed, but without being able to detect fluctuation. In reality, when there is a well-grounded suspicion of hepatic abscess, the insertion of the aspirating needle affords the best means of making a correct diagnosis. The needle should be entered in the eighth intercostal space, except when there is a distinct prominence elsewhere, somewhat in front of the mid-axillary line, and it should be passed in a somewhat upward direction, to the depth of three or four inches, if pus is not found before. If no purulent matter is found, it is advisable to wait a day or two before exploring again. The needle should then be passed in another direction, and will often discover the abscess.

Enemata of Peptones.

M. Henninger (*Paris Médical*, No. 29) gives the following formula for enemata of peptones: Five hundred grams of very lean meat, minced fine, are placed in a glass receiver, on which are poured three litres of water, and thirty cubic centimeters of hydrochloric acid, of density 1.15; to this is added two and a half grams of the pure pepsine of commerce, at the maximum of activity—that is to say, digesting about two hundred times its weight of moist fibrine. It is left to digest during twenty-four hours at a temperature of 45 Cent. (113 Fahr.), either in a water-bath or a stove; it is then decanted into a porcelain capsule, brought to boiling point; and while the liquid boils, an alkaline solution is poured into it (250 grams of carbonate of soda to 1000 grams of water), until it shows a very slight alkaline reaction. About 165 to 170 cubic centimeters of this solution must be added to it. When this result is obtained, the boiling liquid is passed through a fine linen cloth, the insoluble residue being expressed; and this liquid, which amounts to about two and a half litres (three pints) is reduced in the water-bath to 1500 or 1800 cubic centimeters. Half of it is administered every day in three enemata, adding 200 grams of white sugar for the twenty-four hours. The whole of the meat is not dissolved; the fat, the tendons, the connective and elastic tissues, form an insoluble residue, amounting to about a third of the meat used.

Precautions in Thoracentesis.

M. Raynaud (*Journal de Médecine*) insists on a certain number of precautions which he considers it important to observe in thoracentesis. To avoid severe attacks of cough, which often occur in the course of the operation, and are extremely painful and inconvenient, he recommends the subcutaneous injection of a full dose of morphine before performing puncture. In this way the cough is almost always prevented, or, at least, very considerably diminished; rigorous cleansing of instruments, and especially of the trocar, with antiseptic solutions, he considers a matter of the utmost importance, and recommends the most minute precautions with the view

of avoiding subsequent suppuration. The simplest method is to pass the instruments to be employed through the flame of a spirit lamp, and subsequently to plunge them in carbolic acid solution. When the operation for empyema and modified injections are employed, in lieu of leaving the patient seated, as is often done, it is preferable to lay him on the opposite side to that on which the operation has been performed; in this manner all the diseased parts are reached by the fluid, while, if the patient remains seated, the lower parts only are reached. Further, it must not be forgotten that the greatest care is necessary in performing these injections; for, in certain cases, rare it is true, but still far too frequent, epileptiform convulsions have followed, ending in rapid death. The washing out should, as far as possible, be performed by means of a syphon; or, if any other injecting apparatus is used, great care should be taken to prevent the jet produced from attaining too great a force and directly striking the lung.

The Diagnosis of Hereditary Syphilis.

Professor Parrot is now one of the leading French authorities on syphilis, and hence his opinions are authoritative. He observes that the diagnosis of infantile syphilis is often difficult, both on account of the multiplicity of forms which it may assume, and often because it is often necessary to make a retrospective diagnosis (*Ann. de Derm. et de Syphil.*, 1881, No. 1). Age is of great importance, as certain lesions only show themselves at certain periods of life. It is especially, however, the seat of the affections that has to be taken into consideration. The lesions generally appear on the thighs, the buttocks, the lower lip, and about the chin and angles of the eyelids. One sign, to which much importance has been attached, but which, according to M. Parrot, is often wanting, is the bistro tint of the skin, the cachectic look, and the senile aspect of the face. These are sometimes seen in syphilitic infants, but are most frequently due to malnutrition. All the eruptions due to inherited syphilis have more or less of a violet tint. An eruption due to malnutrition is of a more delicate rose color. The syphilitides may be bullous, macular, papular, or vesico-pustular. Pemphigus is the earliest, for it sometimes appears at the sixth or seventh month of intra-uterine life. It is mostly observed at birth, when it is seated on the palms and soles. The contents of the bullæ are turbid or purulent. In children two months old, pemphigus may appear on the trunk and around the axillæ. Such an eruption is not syphilitic. The larger dimensions of the bullæ, the transparency of their contents, and the rapid desiccation, are sufficient to distinguish it from the syphilitic form. Macular and papular syphilitides are similar to the corresponding affections in adults. The vesico-pustular eruption is the rarest and latest. The diagnosis is difficult. It begins as a papule surmounted by a vesicle, which quickly bursts, or as a red patch on which a bullæ develops and rapidly ulcerates. The affection attacks the abdomen by preference. All these syphilitides have a tendency to ulcerate,

in which case the ulceration may remain limited to the syphilitic lesion, but sometimes it extends more widely. When the ulcers progress very rapidly, and when they extend to the neck, tuberculosis is to be feared.

Origin of Typhoid Fever and Diphtheria.

Dr. William Strange, the President-elect of the British Medical Association, has the following in a recent address on the origin of typhoid fever and diphtheria:—

Let me briefly point out the direction in which I think we should work in order to add to our stock of real knowledge bearing upon the etiology of these two diseases.

1. I would suggest that all available facts as to the origin, spread, and true nature of enteric fever and diphtheria should be marshaled side by side, without prejudice or favor to any theory.

2. I would collate the facts derivable from the history of cognate diseases, such as cholera, yellow fever, erysipelas, and place them alongside the above; and also collate the phenomena of certain diseases of animals—chicken cholera, for example, with those observed as above.

3. Compare the conditions under which the diseases in these two last heads prevail with those observed of enteric fever and diphtheria.

4. Inferences may now be drawn which will be available as landmarks, or provisional propositions, with which to go to work in the construction of a theory of the origin of these two diseases.

Allow me, in conclusion, to state what I look upon as correlated facts already known in the inquiry.

I think it is proved that enteric fever, however it may have commenced, is sometimes propagated from person to person by close propinquity or actual contact with the intestinal discharges. I had a clear case of this in my own house. And a *materies morbi*, which may or may not be composed of living specific germs, is sometimes conveyed from the sick to the healthy *at a distance*, where it takes effect in producing exactly the same symptoms as in the initial case. But in this event, as in the great majority of cases at least, the sanitary surroundings of those who receive the disease are very faulty. This was the case with the epidemics of cholera, and it is still the case with the spread of diphtheria and erysipelas. These diseases seldom spread in a wholesome house or district.

It is also proved, as far as a negative proposition can be proved, that a *materies morbi* of unknown nature, be it fungoid or be it chemical in composition, is often bred in drains, sewers, privies, or on damp or foul surfaces, or in earth or water saturated with sewage matters; and that this *materies* gives origin to enteric fever and to diphtheria without the action of any specific germ derived from the body of a previous patient. Unless we accept this proposition as founded in fact, the origin of thousands of cases of these two diseases is involved in impenetrable mystery. And if this proposition be accepted, then we must conclude that some specific or quasi-specific organism (or germ, if you please), or else a

mere chemical product, is formed in such matters, *de novo*.

These substances, organisms, or chemical products, whatever they be, undoubtedly become capable of self multiplication and intensification in the glands of the intestine on the one hand, and on the mucous membrane of the throat and pharynx on the other. They also now become capable of conveying their respective diseases by direct contact, as in the first-named proposition; and, to many minds, this is the usual order of events in the origin and diffusion of both enteric fever and diphtheria.

Finally, there are analogies observable between these two diseases and erysipelas and some well-known forms of septæmia. Recent experiments, including those of Pasteur, Burdon-Sanderson, George Harley, and especially of Gravitz, go to show the remarkable fact that certain deleterious organisms—fungi, etc.—may be so cultivated, by repeated inoculation in living tissues, that, from comparative harmlessness, they pass on to a condition of true infectiveness, their virulence increasing with each fresh inoculation. Gravitz even believes, and in this he is supported by other German observers, that inoculation with germs of "low culture," or with a very minute quantity of the *materies*, will confer immunity from future attacks. Does not this lead up to the presumption, to say the least, that the poisons of typhoid and diphtheria, whatever may be their real essence, in passing through the bodies of patients, acquire increased virulence, and so give rise to those phenomena of direct contagion in some instances, which Dr. Budd and his followers so strenuously contend for in all?

Here, then, we come in sight of that *tertium quid*, that something *ab extra*, to which I have already alluded as apparently necessary to harmonize and reconcile the various conflicting phenomena of these diseases. And it will be in pushing investigations in this direction to their utmost attainable limits that I shall look for any real extension of our knowledge of them.

Treatment of Heart Diseases.

An interesting review of an article on this subject, in the *Italian Medical Gazette* of January, 1881, appears in the *Lyon Medical* of July 10, 1881. The writer of the article (Prof. Renzi) has evidently studied with care the actions of three important drugs largely used now-a-days in cases of heart disease—viz., bromide of potassium, iodide of potassium, and chloral hydrate; and he has given some important information regarding them. Bromide of potassium is shown to have such a direct influence on the heart and capillaries as to entitle it to a high position among the cardio-vascular drugs. According to Prof. Dujardin-Beaumetz, who considers it one of the best heart tonics we possess, the bromide, besides being a nervine sedative, acts directly on the heart, and lessens considerably any irregular action of that organ. He says that, as a nervine sedative, the drug is useful in countering the sleeplessness which so greatly infests and wears out patients suffering from heart disease,

while its value in such cases is greatly enhanced by its direct beneficial action on the diseased organ itself. According to Prof. Sée (largely quoted along with Dujardin Beaumetz by the writer of the article), bromide of potassium is especially useful in heart affections where we have diminished arterial pressure, rapid and irregular action of the heart, passive congestions, oedema, cyanosis, dyspnoea, and sleeplessness.

Iodide of potassium is shown to be very beneficial in dyspnoea arising from heart disease. It is also of great value in arresting degenerative changes in the heart tissue.

The action of chloral hydrate on the heart, as observed by Prof. Renzi, is at once to diminish the rapidity of its action, and after a time to reduce its energy. The drug seems to act on the heart by paralyzing either the cardiac ganglia or the vasculo motor centres in the brain. The researches of Claude Bernard, Rokitanski, and others, would indicate that the latter are chiefly affected by the administration of chloral, for they found that it caused great diminution of blood pressure by dilatation of the capillaries.

In summing up his observations on the three drugs referred to, Prof. Renzi says of bromide of potassium that it lessens the anxiety of patients suffering from heart disease, gives them a certain sense of comfort, and enables them to breathe freely. Under its influence sleep is more easily obtained, is more tranquil, and of longer duration than when induced by other drugs. It is, moreover, a more natural sleep. The bromide reduces undue rapidity of the heart's action and of respiration. Cough, however, seems to be aggravated by the use of bromide of potassium alone.

Of iodide of potassium, he says that it is a most useful drug in diseases of the heart. One of its chief effects is a complete relief from dyspnoea and all asthmatic symptoms.

Chloral hydrate is not much esteemed by him. It can procure sleep of a kind, but is of no use in relieving the dyspnoea so troublesome in cases of heart disease. It is, moreover, dangerous when given in conjunction with iodide of potassium, the latter drug apparently having the effect of greatly increasing its soporific action.

From Prof. Renzi's summing up, it would seem that a combination of the iodide and bromide of potassium is a most beneficial remedy in cases of heart disease.

The Private Care of the Insane.

In a paper published in the *Alienist and Neurologist* for October, 1881, Dr. Ralph L. Parsons shows:—

1. That public institutions have hitherto been, and for an indefinite period in the future are likely to be, inadequate for the care of all the insane who need to be removed from their own homes.

2. That public asylums, on account of necessary economies, their great size, over crowding and other causes, cannot become the best establishments for the care and treatment of all the insane.

3. That the smaller the number of insane

patients associated together in one establishment, the better it is for the patients.

4. That the greater the ratio of sane persons associated with and in care of the insane, the better it is for the latter.

5. That chartered asylums, private institutions and private homes, each afford peculiar advantages for the care of the insane which cannot be afforded in public asylums; and, hence, that they supply a social need.

6. That the treatment of many, if not of a majority of the insane in an ordinary private house, is feasible; and that in suitable cases this method of care and treatment under family influences and associations, and apart from the associations and restraints necessarily incidental to institutions, has special advantages for the patient not otherwise attainable.

7. That many indigent insane persons who have hitherto been confined in public institutions might be satisfactorily cared for in private families in their own social sphere; and that judicious attempts to accomplish this object are advisable.

8. That whenever more than one insane patient is under care and treatment in the same house and family, a competent physician should be the head of the family and in responsible charge.

9. That every insane person who is not in immediate charge of his own relatives, at least, should be subject to State supervision, and should be under the professional care of a competent physician.

10. That while certain recent cases of insanity ought to be treated at their homes for at least a period of time, and while certain chronic cases may advisably remain at home permanently, it is for the best interest of the majority of insane patients and their relatives that provision be made for their care and treatment elsewhere.

Effects of Sexual Involution.

A writer in the *London Medical Times and Gazette*, says:—

Centuries ago, it was a customary thing to deprive youths of the power of propagating their species, for the purpose of preserving and further developing their admired soprano voices. Just as we rob the rose of its reproductive function for the sake of procuring smell, color, and size of flower, and, by careful selection of the specimens to be submitted to this process, do actually get a result of great value and beauty, so the experts of the middle ages, by judicious choice of the subject from whom they removed the parts essential to generation, produced that marvellous quality and compass of voice for which the *virgines* were valued. Scientifically, both are monstrosities.

We have passed from vegetable to human pathology. Let us now go a step further, into the realm of mental phenomena. The monk, by rigorous self-discipline, stamps out all thought of the joys of family life, puts from him all cares of fatherhood, and thus, dwarfing one side of his nature, develops in excess in another; attains an emotional exaltation, a vividness of realization of the things unseen, which cannot be attained among the anxieties, strifes and disappointments.

ments of the outer world; a state of strong feeling which is communicable, by burning words and speaking gestures, to others less fervid, and the possession of which has made the lives of such men—St. Bernard, for instance—among the most precious possessions of the world.

But, by maiming and dwarfing one set of faculties, we do not always get a result which is desirable. The deprivation of one function is not an advantage to the individual. Eunuchs have not always beautiful soprano voices, and the corruptions of monastic life have been often enough described. Whether the sexless rose will always be as much admired as it is, we will not discuss. Examined closely, with the aid of a magnifying glass, the barren repetition of petals does not present anything like the variety of beauty offered by the stamens, pistil, anthers, and pollen of the perfect flower. In diversity of form, delicacy of texture, and sweetness of color, the natural state of the plant is superior to the monotonous uniformity of the blossom which is the result of the gardener's interference.

Cure of Spina Bifida with Iodine Solution.

The Glasgow *Medical Journal* gives this case in a recent issue:—

The patient was an infant a month old. The cleft in the spine appears to be in the lower lumbar or upper sacral region. The tumor was almost as large as an infant's head, and was quite translucent, except a small portion at the base, where it was opaque; the skin evidently was thinned from distension, but the surface was quite sound. There was a slight longitudinal furrow, but there was no evidence of any septum. On May 25th chloroform was administered, about one half of the fluid within the tumor drawn off, and solution of iodine injected, according to the method devised and practised by Dr. Morton, of Glasgow. The tumor slowly filled again, and within a day or two reached almost its former size. The skin, however, appeared to thicken, and gradually the tumor lessened in size, so that in the course of a few days all that remained of the tumor was a small nodule of thickened and puckered tissue at the site of the puncture, and some redundant skin altering to some extent the outline of the buttock. The injecting of the tumor had no appreciable effect on the health of the child. When last seen, on August 22d, there was no tendency whatever to a return of the tumor, and the child was in good health.

Nerve Stretching in Locomotor Ataxy.

The attention that is being given to the subject of nerve-stretching as a curative measure in locomotor ataxy is leading to the operation being performed quite often. Dr. Davidson records two cases in the Liverpool *Medico Chirurgical Journal*. The first case is that of a joiner, thirty-six years of age, who had contracted syphilis sixteen years before. The spinal disease dated for about two years, commencing with attacks of bilious vomiting, headache and hazy vision; shooting pains in the legs began twelve months later, and characteristic ataxy set in. The patellar reflex was absent. The

pains and gastric attacks continued, and four days after admission both sciatic nerves were stretched by Mr. Banks, the degree of extension being forty pounds, or about half the breaking weight of the sciatic nerve. The wounds were treated antisepically. Convalescence was slow. At the end of three weeks, however, there was improvement in coördination and a slight return of the patellar reflex. There was no recurrence of the lightning pains and gastric attacks, and at the end of two months the patient could walk fairly well, the patellar reflex being still more evident. The second case was not so successful. The patient was thirty-four years old, and had first experienced shooting pains in the hands and arms about the spring of 1878. Since the beginning of 1879 he had suffered from frequent and severe attacks of vomiting. He was weak and emaciated, unable to walk without assistance, and his movements were characteristically ataxic, the arms being involved as well as the legs. The operation was performed as in the other case, and he recovered quickly from it, but the ataxia in the legs was not improved. However, the arms were better, and the pains and gastric attacks lessened. Dr. Davidson remarks that this case was more advanced than the other, and that the want of success in it "proves little against the treatment doing good in an earlier stage of the disease."

REVIEWS AND BOOK NOTICES

BOOK NOTICES.

A Practical Treatise on Hernia. By Joseph H. Warren, M.D., etc. Second and revised edition. Fully illustrated. Boston: James R. Osgood & Co., 1882. Cloth, 8vo, pp. 428

The rapid exhaustion of the first edition of Dr. Warren's "Treatise on Hernia," and the call for a second edition in less than a year from the publication of the first, must certainly be very flattering to the author. In the present edition numerous changes and additions have been made, swelling the volume to nearly double its former size. Owing to the fact that stereotype plates of the former edition had been cast, and the desirability of utilizing the same where practicable, some of these additions have been heterogeneously huddled together into one chapter, instead of being introduced in their appropriate places in the text. The inconvenience of this has, however, been remedied by full references, which will enable the reader to connect the disconnected passages, and thus prevent confusion. Among the additions we find reference to quotations from some of the most recent contributions to the literature on hernia, embodying the results of the observations of several eminent surgeons; also, a résumé of clinical reports. Several new illustrations have also been introduced, while the appendix of the former edition has been omitted.

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IS THE OPIUM HABIT INJURIOUS?

One would suppose that if anything was well settled it is that the practice of opium eating is quite injurious. But a recent discussion in the English professional journals, partaken in by surgeons who had lived in China and India as well as by physicians of extensive observation in Great Britain, shows that there is far from a unity of opinion on this point.

One writer intimates that, even yet, the profession as well as the public are controlled in their imagination by the vivid pictures drawn by the magic pen of De Quincy. Many people have attained the age of sixty or seventy who have been habitual opium-eaters for thirty years or more. One surgeon, a determined opponent of opium as a luxury, says that such cases have come under his own observation, and adds that it does not appear that the Chinese in easy circumstances, who can obtain the ordinary comforts of life, are materially affected as regards longevity by this practice. Another, who for three

years was resident in China, states, as the result of his experience, that the effects of the abuse of the drug do not often come under observation, and that when such cases do occur the habit is frequently found to have been induced by some painful chronic disorder, to escape from the suffering of which the patient has fled to this resource. He believes that, as regards the effects of the habitual use of the drug on the mass of the people, there is no evidence whatever.

A physician who practices in the Cambridgeshire fens, where the people habitually use a great deal of the drug, is convinced that the ill effects of opium-eating are much exaggerated. It is easy to recognize the opium-eater by the peculiar yellow, wrinkled skin; but these people live to a great age, frequently until they are eighty or ninety. Their only trouble is constipation, and this they overcome by taking large doses of jalap. The moral consequences are also slight, and are due chiefly to the fact that opium-eating is emphatically a secret vice. The opium taker is always ashamed of the habit, knows that he is wrong, and will tell any amount of lies rather than confess his weakness. It is ridiculous, he thinks, to compare opium with alcohol, which, when taken in anything like excess, ruins the health and fills our jails and workhouses. We should be inclined rather to class opium with tobacco in its ill effects (in excess) as regards the body. It is a noteworthy circumstance, that phthisis is uncommon in the Fen district, and is rarely met with among opium-eaters.

But these opinions were met by others just as positive on the other side, and speaking also from personal observation. Thus one of them says:—

Living in a large Chinese city, and brought into daily contact with the people, I came to the decided opinion that the habitual use of opium is most disastrous, alike in its physical and moral results. Hundreds of men came to me asking help in order to deliverance from the habit. These men, mostly of the working classes, would be earning about a shilling a day, and from a third to a half of their earnings would be spent on the luxury of the pipe. This brings out a characteristic difference between the use of alcoholic drinks and opium. It is but a small amount of opium that is represented by fourpence or six-pence a day; but once the *habit* is contracted, so

tight is the hold it takes upon a man, that when, through stress of circumstances, or dread of a still deeper entanglement, or conviction of the evil of the practice, he desires to escape from it, he is fain to seek all possible help to mitigate the extreme physical distress resulting from disuse of the drug.

In such a question we are inclined decidedly to the latter opinion quoted. Personal observation has convinced us in the strongest manner of the insidious nature of the habit, of the unfitness for the duties of life which it brings about, of its injurious effects on the general health, and of the supreme difficulty in renouncing it. This, too, is the result of the observations of the physicians in this country who have had charge of the institutions for the care of opium eaters. It is, therefore, important that neither the public nor the profession, especially perhaps the profession, take no light view of this matter. Generally the habit begins from a prescription, and it is apparently on the increase. Dr. EARLE, physician of the Washingtonian Home, Chicago, has published the result of some observations made by him on the subject of opium-taking.

During the last five years, he believes, the practice has increased, fostered, probably, by the ease with which the drug seems to be procurable. Thus fifty druggists of whom inquiries were made acknowledged to having 235 customers among them. Of these the great majority (169) were females; the age of the larger number of the victims of this pernicious habit was between thirty and forty years, and they were mostly of the middle class. Various reasons are given for taking the drug—e. g., its stimulative and happy effect, previous addiction to drink, unhappy marriage, rheumatism, neuralgia, "female complaints," previous sickness, wounds received during the war, loss of property, and so on; but the great majority confess it was prescribed during some disease in which pain was a prominent symptom. Such being the case, the physician should be most sedulously on his guard in prescribing this drug. It is one possibly the most potent of all for good, and it is hardly less dangerous than the most destructive, on account of its insidious fascinations.

THE RELATION OF SCROFULA AND TUBERCULOSIS.

In a complete and very interesting communication to the *Soc. Medicale des Hôpitaux* on the relations existing between scrofula and tuberculosis, M. Grancher considers the question as regards etiology, pathology, and clinical appearances:—

First, as regards etiology: Scrofula, according to the dualists, is a diathetic and hereditary malady, while tuberculosis is parasitic and infectious. The first proposition, as regards scrofula, is universally admitted, but there is no proof that tuberculosis may not also be diathetic and hereditary. It is admitted that the sons and grandsons of patients with chronic arthritic diseases (Pidoux), and the offspring of degenerated races become tuberculous easily. Why, then, should the sons of tuberculous patients be an exception to the rule?

Pathological anatomy demonstrates in a neoplasm the presence of any specific element, or any peculiar arrangement of cells, fibres, and vessels, or, finally, if there is a particular evolution of the morbid processus. One element alone is not now considered sufficient to characterize a neoplasm; the cell of Lebert, the *Riesenzellen* of Shuppel, have no longer any value. The study of the texture, which has been the method of Virchow and the modern histologists, has led to the discovery of the tuberculous follicle (Friedlander and Kaster), and to the determination of the anatomical unity of tuberculosis (Grancher, Thaon, Charcot).

But the tuberculous follicle alone is not sufficiently characteristic, for it may be met with in other diseases—in syphilitic tumors (syphilome) for instance.

Proper attention should then be paid to the evolution of the malady. The question is whether the morbid processus, generally considered as scrofulous (chronic inflammations, suppurations, cicatricial sclerosis), are not in reality dominated by tuberculosis.

Tubercle has two periods of evolution: the first is microscopic, the tubercle passing successively from the stage of infiltration to the

nodular state, after this becoming follicular; in the second, or microscopic stage conglomeration and generalization takes place.

In the first, the tubercle is in the embryonic state, constituting a local affection, benign and curable; in the second, it is perfected, it has attained the adult age, and invaded the organism. The tuberculous follicle, a local lesion anatomically imperfect and relatively benign, as in lupus, is not at all comparable to the gray granulation, well known from its characters of generalization and infection.

In the lesion termed scrofulous, tubercle is found sometimes in the state of tuberculous follicle, as in most cases of lupus and of chronic indurated adenitis; sometimes in the state of conglomerated tubercle as in cases of chronic osteitis and cold abscess (Lannelongue).

It can then be concluded that the two grand phases of development of tubercle are found in scrofulous lesions; the microscopic phase, or embryonic tubercle in children, and erosions of cutaneous or mucous surfaces; the microscopic or conglomerated tubercle in the adult in chronic osteitis and cold abscess. *Clinical observation* demonstrates that if there exists but one tuberculous disease, there are many varieties of tuberculous patients.

One variety realizes the complete evolution of tubercle. The patient has suffered from local benign scrofulous lesions while young; when he has arrived at the adult age bronchitis supervenes, and tubercle becomes fixed in the lung. Finally, gray granulations are disseminated in all the organs, meningitic accidents supervene, and death terminates the scene. But it suffices to recall the numerous forms of tuberculosis, granular phthisis, chronic phthisis, pneumonic phthisis, to show that the evolution of tubercle is often incomplete, and that the symptoms and physical signs may be so different in different individuals as to lead the most capable sometimes into error. These observations will be found of special interest in connection with the special report on tuberculosis we are now publishing.

NOTES AND COMMENTS.

The Importance of Careful Diagnosis.

Dr. Joseph W. Thompson, of Paducah, Ky., relates in the *Nashville Journal of Medicine and Surgery*, for October, 1881, a case which forcibly illustrates this:—

Capt. —— has been suffering with severe pains in the right tibia, for the past ten years. It has been supposed to be of specific origin, and has been accordingly treated by several prominent surgeons. He has visited the Hot Springs, Ark., and has taken immense quantities of iodide potash (he estimates the cost at from \$700 to \$1000) during the past ten years—from all of which he has received only temporary relief—mainly from the use of the iodides in full doses; the pain recurring as often as the iodides have been lessened or discontinued.

In March, 1880, he consulted the author with the view of having his leg amputated, but after an examination of his case, he concurred in the opinion of others who had treated him, i.e., that his trouble was specific, and that amputation was not demanded.

Again he was put on the iodide potash in full doses, and the iodide mercury granules, one-fourth grain, which treatment was continued seven months with only temporary relief.

Finally, after reflecting much about the case, and more thoroughly inquiring into its history, he concluded that the disease was not specific, but that it was the result of chronic inflammation of the periosteum, and probably involved the bone.

October 18th, 1880. Patient etherized by Dr. Maxwell. An incision six inches long was made over the tibia, well through the periosteum. The incision developed that the trouble was periosteal and sub-periosteal, and the bone seemed to be involved at the lower part of the incision in the form of a small node. With a Heya' saw the node was sawed through longitudinally, i.e., parallel with the tibia down to the medullary structure which was found to be ossified.

The doctor ascribes the cause of the trouble to the fact that ten years previous, the steamer Little Rapidan sank in the Tennessee river, on a cold March day, Capt. —— commanding. In his efforts to rescue some ladies he got thoroughly wet, followed in a few hours by a hard chill and fever, accompanied with severe pain in the right tibia. The pain continued from that time up to the operation above described, except when controlled by large and repeated doses of iodides.

Since the operation, nine months ago, he has suffered none of the usual pain and has taken no iodides after the fifth day.

Prolonged Retention of a Dead Fœtus.

Prof. Depaul presented at the Paris Académie de Médecine a specimen of a fœtus which was expelled after a pregnancy that had lasted between ten and eleven months. A young woman, who had already borne a child, ceased menstruating after September 8th, and she was delivered on August 14th of a child, which had died at the fifth month, and was expelled without the membranes having been ruptured, and exhibiting no signs of putrefaction. It is the first time that a pregnancy has occurred in Prof. Depaul's practice which has been prolonged between ten and eleven months, the fœtus not being expelled from five to six months after its death. The mother, neither during her pregnancy, nor since her delivery, has presented any symptom of a morbid character whatever. This case, he observed, was only one to be added to many others proving that a fœtus dead in utero may sojourn therein for several months, providing that the membranes remained intact, without any injury to the mother. The macerated fœtus, on this occasion, did not exhale the slightest smell of putrefaction, although it had remained in contact with air and water during twenty-four hours.

The Etiology and Anatomy of Endometritis.

Dr. Karl Ruge, in a contribution to the *Zeitschrift für Geburtshilfe und Gyndkologie*, describes the morbid anatomy of endometritis. He distinguishes three forms of the disease—the interstitial, the glandular, and the mixed form. The *interstitial* form is characterized by general thickening and softening of the uterine lining membrane, due to the infiltration of the tissue with small round cells; the vessels are enlarged and tortuous, the glands unaffected. The *glandular* form is marked by increase in the gland tissue; the glands are widened, and diverticula branch from them in all directions; the membrane looks finely cystic or sieve-like, and is greatly thickened. In the *mixed* form these changes may either be combined, or they may be found quite separate and distinct at different parts of the same uterus. The interstitial form histologically approaches sarcoma; the glandular form is allied to adenoma. The interstitial form may occur at any age; the glandular form is more common in the later years of sexual life. Child-bearing is a predisposing cause for each kind; the twenty-six cases examined by Dr.

Ruge, excluding three who had no children, had had on an average six children each.

Defer's Method of Treatment of Simple Hydrocele.

Dr. Rol, in the *Bull. de Ther.*, praises this method of treatment, of which he gives the following description: The hydrocele is punctured with cannula and trocar, as usual, and evacuated; through the cannula is introduced a sound, on the end of which is fused a little piece of nitrate of silver; the interior of the tunica vaginalis is then rapidly touched at different points with this caustic, when the sound, and after it the cannula, are withdrawn. The results of this mode of treatment are said to be excellent. Notwithstanding the occurrence of a sharp inflammation, lasting five or six days, a cure is generally obtained, not by adhesion of the two surfaces of the tunica vaginalis, but by a simple vital modification of that membrane. The return of the effusion is rare. Defer's operation is thus described as perfectly safe, thoroughly efficacious, and easily performed.

The Etiology of Croupous Pneumonia.

According to Dr. Edward Sanders, in the *Archives of Medicine* for August, 1881, acute lobar pneumonia may be regarded as an acute infectious disease, dependent upon the introduction into the system of a specific poison, the visible expression of whose activity is a croupous inflammation of the lungs, and may be classed among the miasmatic-contagious group, belonging thus to the same class of maladies as typhoid fever. In all probability, the poison is taken into the organism by absorption through the lungs—that is, by inhalation.

Potassium Bromide in Orchitis and Inflamed Breast.

Dr. J. Grainer observes, in the *Virginia Medical Monthly* for September, 1881, that when consulted in time, he finds nothing else necessary, either in orchitis or milk breast, but potassium bromide, in five-grain doses three times a day, or smaller doses, more frequently repeated. In advanced or complicated cases, he thinks that auxiliary methods should be used, if only as a precaution, or to expedite the cure; but he has never had the bromide to fail him, even when used alone. In orchitis, a suspensory should always be worn. In some of these cases he has seen the disease held in abeyance for weeks, when the patients would persist in the grossest imprudences, in walking and horseback-riding. He rarely restricts them in diet. Yet even these cases eventually recovered, without suppuration

or atrophy. He has had no opportunity to test it in the metastatic orchitis of mumps, but feels sure it will prove as useful as in the ordinary cases, and he expects to find it efficient in the next epidemic forms of parotiditis he may meet with.

Unilateral Inflammation of the Tongue and Pharynx.

Dr. C. J. March, of Camden, Ark., states, in the *St. Louis Courier of Medicine*, for September, 1881, that he was called in the morning of July 15, 1881, to see a colored woman, aged about 35, and found her complaining of a slight headache; pulse and temperature normal and bowels constipated. The right side of her tongue was swollen to twice its normal thickness and the right side of the pharynx, including the tonsils on that side, swollen to a considerable degree. Deglutition was difficult, owing to the swollen condition of the tongue and pharynx, though it was not excessively painful. The submaxillary glands were enlarged, and there was quite marked tenderness on external pressure over the affected region. There was quite profuse salivation, the saliva coming mostly from the affected side. She complained of an itching or slightly burning sensation in the affected parts, but no pain, except when she attempted to swallow.

She said that some weeks before her upper lip had suddenly become swollen, and she had had circumscribed swelling on the chest; all of these swellings, both of the lip and on the chest, having been attended by the itching or burning sensation before mentioned. The swelling of the lip and the chest disappeared spontaneously. There were no menstrual derangements and nothing else to account for the affection.

The doctor prescribed five grains of cinchonidia and twenty drops tincture of chloride of iron, in water, every three hours, and a dose of compound cathartic pills for the constipation. This was followed by a prompt subsidence of the affection.

Chloral in the Treatment of Cerebro-Spinal Meningitis.

Dr. Geo. Goodhue, of Dayton, Ohio, in a paper published in the *Ohio Medical Journal*, for October, 1881, gives the history of a severe case which terminated in recovery, under the free use of chloral. The temperature on the first day was 106°. Twenty grains of chloral were administered every half hour, until three drachms had been taken, which reduced the temperature to 102°. The amount of chloral given during the twelve days he was ill amounted to 1015 grains.

Milk constituted his entire diet, from time of attack till convalescence was fully established. It was made a part of his treatment to give him milk at regular intervals and in as great amount as his stomach would bear. The quantity which he took daily was not measured by drachms but by pints, and not once did his stomach refuse to perform the work imposed upon it; showing that chloral, even in such large doses, and frequently repeated for twelve days, did not interfere with nor impair in the least the functions of this important organ.

The therapeutical action of chloral in this disease the author sums up as follows:—

- 1st. It relieves the severe pain, either mechanically, by removing congestion, or as a true anesthetic, or, more probably, by a combined action in both directions.
- 2d. As a sequence of the relief of pain, muscular quietude is produced.
- 3d. By its hypnotic influence, abundant and refreshing sleep is obtained.
- 4th. By its antipyretic influence, temperature is reduced.
- 5th. It produces no constipation, but probably has a slight laxative effect.
- 6th. It does not disorder the stomach or materially alter any of the secretions.
- 7th. It produces no appreciable effect on heart or respiration.
- 8th. It is not cumulative in the system.

Surgical Treatment of Hydatid Cysts of the Liver.

In a recent memoir on the above subject, M. Roger, of Havre, arrives at the following conclusions:—

First. The slow opening by means of caustics is a painful and slow process, uncertain as regards the end it is desired to obtain, and having also its martyrology. Second. Capillary puncture, with or without aspiration, is successful if the cyst is unilocular, but not otherwise, and if several punctures are made there is danger the contents of the cyst may become purulent. The direct and primary puncture, with a trocar of large calibre, is the method accepted by the author. He allows the cannula of the trocar to remain until it is almost ready to drop from the wound; he considers that by that time adhesions have become established between the visceral peritoneum and that covering the external parieties of the abdomen, so that, consequently, when a rubber sound is introduced the liquid escapes outside the abdomen, and there will be no danger of peritonitis.

SPECIAL REPORTS.

NO. XVIII.—TUBERCULOSIS.

(Continued from p. 474.)

PERITONEAL TUBERCULOSIS IN CHILDREN.

Two recent papers on this subject deserve mention. Dr. GARLICK (*Lancet*, December 25, 1880) states that the cases in which the lesion consists in a growth of tubercle in the peritoneum are very numerous and various in the appearances they present. Based on their clinical characters, he offers the following classification—

1. Latent cases, either a part of a general tuberculosis, or secondary to tubercular ulcers. These are probably the most frequent, and "their latency results either from the absence of inflammatory change or from the obscuring of its symptoms by the more grave affections of other organs."

2. Cases characterized by an ascites, which may mask all other conditions. It is well known that the extent to which atrophy exists in these cases is very variable, being sometimes extreme, but even then may be completely absorbed. Sometimes the fluid is thrown out in pus, and a long-continued discharge may take place from the navel.

3. Cases presenting distinct abdominal tumors of various sizes and shapes, but with a characteristic hard, transverse ruler-like band, situated about or above the navel, sometimes stretching across the abdomen, and losing its definition at its extremities, or passing into other masses.

4. Cases in which all the abdominal contents and the abdominal wall are mutually and inextricably united, often with attendant intercommunication of different parts, so converting the abdomen into a trabeculated cavity.

The second paper is by Dr. HENOCHE (*Berlin. Klin. Woch.* No. 2, 1881). He relates the case of a boy 8 years old, the marked subject of peritoneal tubercle. The diagnosis of the disease is by no means always easy. Dr. H. refers especially to the absence of pain on pressure as a diagnostic symptom. Chronic non-tubercular peritonitis often gives rise to error, as it is often accompanied by decided emaciation.

TUBERCULOSIS OF THE BONES AND JOINTS.

In the treatment of this surgical complication a decided gain has been made by the employment of *iodoform*. At the last Congress of German Surgeons it was stated that this remedy had been used in Billroth's clinic since the beginning of the year with striking results. Wounds made in the extirpation of tumors, when sprinkled with *iodoform* and covered with a dressing of cotton-wool, healed without secretion, just as wounds heal by granulation under a scab; tubercular processes in the skin, as well as in the joints and bones, were definitely healed by this treatment. In cases of suspected tubercular dis-

ease of joints the injection of an ethereal solution of *iodoform* appears to be sufficient. If, however, fistula be present, the primary focus must be exposed, scooped out, and filled with *iodoform*; and the fistulae themselves must be treated with *iodoform* and gelatine bougies. For injection, an emulsion of *iodoform*, with mucilage of acacia and water, is recommended, or a solution of one part in ten of ether, or of one in five of ether and five of oil. *Iodoform* does not excite any influence at a distance; so that, while very severe local disorders may be healed, death may occur from tubercle of internal organs. Hence, the constant contact of *iodoform* with the diseased granulating surfaces appears to be necessary. According to the researches of Mikulicz, the antiseptic action of *iodoform* is small but constant; this explains the necessity of its constant contact with the granulating surface. *Iodoform* does not prevent the formation of micrococc in blood and serum, nor of bacteria in Pasteur's fluid. Its active principle is iodine, which in the tissues is transformed into iodides of potassium and sodium. Toxic symptoms occur only in cases of large wounds, and are of short duration.

Dr. Gussenbauer stated that he could confirm the excellent action of *iodoform*, which he placed before all other known antiseptics as a means of producing healthy granulations. In nineteen cases of tuberculous affections he had hitherto met with seven rapid recoveries.

In this connection we must not omit to mention an extraordinary case reported by Dr. BATTY in the *American Journal of Medical Science*, April, 1881:—

The case was that of a young man aged twenty, who suffered for nearly a year with suppurative inflammation of his left knee and who presented the physical signs of consolidation of the left lung, in the upper part of which a large cavity existed. Amputation was thought advisable, but was delayed by advice of a consultant, on account of the advanced disease of the lung. Finally, the patient called for amputation of the thigh, to release him from the intolerable suffering, from which opiates had ceased to yield him relief. His condition was very unpromising, but the operation was performed, in order to grant him euthanasia. Much to the surprise of his attendants, he made a rapid recovery; the appetite and powers of assimilation returned; his spirits improved; he slept without opiates; and in one month was out of doors on crutches. A year afterwards he had grown fat, had lost his cough, and was apparently fully restored to health, so that he was enabled to engage in business. After enjoying excellent health, and leading an active out-door life for over three years after the operation, one day he had an accidental fit of

coughing while eating, which resulted in a fatal hemorrhage of the lungs.

This case suggests discussion of the question, What is to be done with a serofulous joint in consumptive subjects? Dr. BATTEY concludes that, if there be a prospect of prompt healing of the stump, amputation is the appropriate remedy.

In a laborious series of papers in the *Practitioner*, for the last year, Dr. J. HAMILTON has been discussing the pathology of tubercle and pneumonia. His conclusions, so far as the former are concerned, are as follows:—

1. A tubercle, in all cases, when fully developed, consist of the following parts: one or more giant-cells, a surrounding reticulum formed by their processes, and a peripheral capsule.

2. The chief infecting sources of secondary tubercle of the lung are catarrhal pneumonia and interstitial pneumonia, accompanied by bronchiectasis. In both of these caseous matter is developed, and, being absorbed, excites the formation of tubercle in the surrounding connective tissues. The main causes of primary tubercle of the lung are softening, cheesy glands and stramous abscesses.

3. Tubercle is liable chiefly to two degenerations. The commoner is the caseous. The other is the conversion of the whole of the tubercle elements into fibrous tissue, and it is to be looked upon more in the light of the natural termination of tubercle development than as a degeneration. When it occurs extensively, it produces cirrhosis of the part.

4. Tubercle, under any circumstances, is a connective-tissue growth, arising from the action of an acute irritant. The irritant is probably a ferment generated in the softening of a caseous mass.

5. The hereditary tendency to phthisis is probably owing to an abnormally great susceptibility of the pulmonary epithelium to irritation.

CHEST MOVEMENTS IN PHthisIS.

The characteristics of the chest movements in phthisis and their bearing on prognosis were the subject of a paper not long since read before the Manchester, England, Medical Society, by Dr. RANSOME. He exhibited diagrams showing the extent of movement in the forward and upward directions of the clavicles and third ribs in the two groups of cases. The larger extent of both forward and upward motion in the chronic cases, and the freedom of motion of the ribs over quiescent cavities, was pointed out, and the attempts at compensation by other parts of the chest-wall were found to have a favorable significance, especially when they took place in the forward direction, and were thus due to freedom from underlying restraint.

CLIMATES IN CONSUMPTION.

An excellent résumé on this subject, containing the latest views, is given by Dr. O. HEUBNER,

of Leipzig, in the *Ärztliche Vereinsblatt*, Mai, 1881. He divided them into—

1. High altitudes; Davos in Switzerland, Colorado, etc. Erythritic cases as a rule are not benefited; that is, those who on slight exertion have much increase of heart action, dyspnoea and flushing.

2. Warm, moist climates. Better suited for erythritic cases, those with dry cough, chronic catarrh and laryngeal complications. Persons usually debilitated in summer should not visit them.

3. Warm, dry climates. These are usually dusty, with rapid changes in temperature between night and day, and the exhalations from the surface of the body much more active. The best representative is Cairo and the adjacent desert.

Whenever a climate cure is chosen the patient must make up his mind to persist in it many months if not years; it is not a means that exerts a promptly and permanently beneficial effect. As no station is desirable all the year round, the patient should change his abode with the seasons. On his return home he should proceed slowly, taking various intermediate stations by the way.

TUBERCULOSIS IN INDIA.

It is an admitted fact, according to a paper read before the London Epidemiological Society by Dr. JOSEPH EWART, that phthisis is much less common among the native than the foreign population in India.

This comparative infrequency of tubercular disease among natives, attributed, 1, to the open-air life led by the people and the respiration of air uncontaminated, to an unusually great extent, with the products of that which has already been breathed; 2, to the wholesomeness of the food consumed, which is composed of a large proportion of the vegetable, with a minimum of the animal aliment, and is well seasoned, well cooked, and presented in an easily digestible form; 3, to the general temperance of the people, and the habit of the protracted suckling of the young, often beyond the completion of the first dentition, or even longer; 4, to the influence of high temperature in mitigating the severity of bronchial, pulmonary, and pleuritic disease; 5, to the greatly diminished prevalence of measles, whooping-cough, scarlatina, mumps, etc.; 6, to the comparative exemption of native children and youths from inherited scrofula.

THE PNEUMATIC TREATMENT.

Since the publication of Dr. WALDENBURG's remarkable researches on the value of compressed and rarefied air in the treatment of diseases of the respiratory organs, valuable applications of this method have been found. The experiments of the author, made with the view of

studying the influence of rarefaction of air upon the circulation of the blood, have led him to certain definite conclusions, fully explaining the well-known beneficial effects of mountain air upon pulmonary phthisis and other diseases produced by deficient nutrition. These effects can be imitated by the pneumatic apparatus to considerable advantage. In Middlesex Hospital, London, according to a report of the Registrar (*British Medical Journal*, July 2, 1881), benefit has been derived from it in cases of phthisis with rapid contraction of the lung.

ANTISEPTIC INHALATIONS.

There can be no doubt of the benefit derived from antiseptic inhalations in phthisis. This benefit is chiefly in quieting the cough, and doing away with cough mixtures which are so sure to disturb the digestion. As a working formula Dr. J. G. SINCLAIR COGHILL, of the National Hospital for Consumption (*British Medical Journal*, May 28th, 1881), uses the following:—

R.	Tinct. iodi ether,			
	Acidi carbolici,	nn	3 ij	
	Creasoti (or thymoli),		3 j	
	Alcoholis,	ad	3 j.	M.

Where the cough is urgent, chloroform or ether may be added at discretion. This is to be used in a respirator, a form of which has been devised by Dr. COGHILL for the purpose.

The apparatus is extremely simple. It consists of a space for a pledge of tow or cotton-wool, enclosed between the perforated surface of the respirator and an inner perforated plate, which can be raised so as to permit the tow to be saturated with the antiseptic solution. Elastic loops are attached to pass over the ears, and retain it in position. The inhaler may be procured either plain, or of a slightly smaller size, and covered with black cloth for wearing out of doors. The pledge of tow, which may be changed once a week or so, should be sprinkled with from ten to twenty drops of the antiseptic solution, from a drop-stoppered phial, twice a day, at least, according to the extent to which the inhaling may be carried on. Of this the patient is the best judge, and the length of time and quantity of solution should be regulated by tolerance and effect. The most important times for inhaling are for an hour or so before going to sleep at night, and after the morning expectoration, which leaves the suppurating surface or cavity dry, to be acted upon—disinfected, so to speak—by the antiseptic vapor. A great many patients come to use the respirator almost continuously day and night, from their experience of its good effects.

Dr. COGHILL attaches the utmost importance to the mode in which the respiration is conducted while inhaling. The patient should be carefully instructed to inspire through the mouth alone, and expire through the nose. In this way the breath is drawn through the saturated tow in the perforated chamber of the inhaler, and passes di-

rectly into the lungs laden with the antiseptic materials. Expiring through the nose only, necessarily involves a complete circulation of the medicated air. The breathing should be short at the beginning of the inhalation, but gradually deepened, so as to displace and affect the residual air in the more distant portions of the lungs. This form of respiration itself is not only of great use in favoring the circulation of the blood in the lungs, and thus aiding both local and general nutrition through that fluid, but it helps very much the expulsion of the sputa by means of the increased energy and thoroughness of the expiratory acts.

In the *Lancet*, Nov. 27, 1880, and May 14, 1881, may be found cases of acute phthisis which seem to have recovered under continuous antiseptic inhalations. They are reported by Dr. G. HUNTER MACKENZIE. He uses creasote, either pure or dissolved, in one to three parts of pure alcohol. Thymol he has found irritating and inefficient. He attributes his success to having the patients respire as *continuously* as possible an "antiseptic" atmosphere. The result obtained would appear to bear out the experiments of SCHULLER, of Grieswald, who found that animals rendered artificially tuberculous were cured by being made to inhale creasote water for *lengthened periods*. Intermittent spraying or inhaling does not produce the same result. In order to insure success the application to the lungs must be made *continuously*.

His respirator is not essentially different from that described above. Some directions for making a domestic or extempore one for the purpose are given by a correspondent of one of the English journals:—

Cut from an ordinary roll of wadding two pieces large enough to cover the nose and mouth. A diamond-shape answers very well. Now, remove the skin-like substance which coats the pieces; put them together, and fold them in a piece of thin muslin, to the ends of which ribbons may be sewn; and your inhaler is made. The writer used it for a couple of years, directing the patient to drop five or ten drops of creasote between the layers of wadding, fold it in the muslin, and to wear it for half an hour two or three times a day, or sometimes through the night. It is well to tell the patient to have two or three of them, as the moisture from the breath spoils the inhaler after a time.

INHALATIONS OF CARBOLIC ACID.

This method of taking carbolic acid has been employed with satisfactory results by Dr. W. WILLIAMS and other English physicians. He utilizes the carbolic gauze of Lister, and merely saturates it occasionally with an aqueous solution of carbolic acid. Mr. ROBERT HAMILTON (*British Medical Journal*, July 2, 1881) says he has treated several cases of phthisis in this way with good

results. The almost constant wearing of the respirator is sometimes an obstacle to this method, but the relief is so considerable that the patients speedily adapt themselves to it.

(To be continued.)

CORRESPONDENCE.

Treatment of Nasal Catarrh.

ED. MED. AND SURG. REPORTER:—

For a number of years after graduating I had a dread of treating catarrh, after hearing Dr. Agnew state, in one of his surgical clinics, that he never cured a case in less than six months, and it often required as much as one year. The very idea of the douches, washes, syringes, atomizers, vaporizers, bougies, etc., were repellant. I found the profession gave the subject but little attention; patients generally drifted into the hands of advertising philanthropists, clergymen, retired and otherwise, Indian doctors, East and West, quacks, etc. Perhaps two persons out of every five are afflicted with it, more or less. Thousands of cases have been treated, without cure or relief, by eminent and skillful physicians. The natural result is that post-nasal catarrh is considered incurable by the people.

The cause of failure has been due to a want of a proper understanding in the treatment. Some have treated it altogether locally, while others have relied on constitutional treatment alone. The proper plan is a judicious combination of both.

The trouble and expense attached to the treatments heretofore recommended have deterred both physician and patient from undertaking or undergoing a trial.

I do not propose to enter into a history of its etiology, pathology, etc. Its various forms, perhaps, originate from the same cause, its names, only varying in degrees and localities.

Its treatment is what we are particularly interested in. The cause should be inquired into, and removed, if possible. Observe the condition of the general health, the secretions of the alimentary canal, the kidneys, liver, skin, etc. These should be placed in proper condition if defective. If syphilis or scrofula exist they should be treated accordingly.

It is not necessary to go over the rounds of treatment ordinarily adopted. They are familiar, and are found in most text books and journals.

Of all the therapeutic agents, I value none more highly than the preparations of petroleum, both locally and constitutional. Having used pills prepared from condensed petroleum, or petroleum mass, very extensively in bronchial and lung diseases, and having been time and again informed by patients that they cured their catarrh, I have used nothing else as a constitutional remedy for several years, and effected a cure in nearly all my cases, unless the catarrh was kept up by hypertrophy of the nasal mucous membrane. The formula I have usually used in making these pills is as follows:—

R. Petroleum mass, 3 j
Pulv. cubebæ,
Pulv. ipecac comp., aa 3 ss.
Make pill mass—four-grain pills.

Sig.—One three or four times a day.

Use chlorate of potash in making Dover's powders, instead of sulphate. The petroleum and cubebæ, by their specific action on the mucous membranes or respiratory tract, heal and soothe; they loosen up the debris which keeps up the irritation. In ozaena their action is palliative; much relief is often obtained; spicules of bone are often thrown off and discharged. I formerly used kerosene diluted with milk and used as a spray in an atomizer; this often gave satisfactory results, but since using the pills I have not found it necessary, only in exceptional cases, to resort to local treatment. I have had but a few patients that found it necessary to use the pills more than two or three months; often cases are cured in as many weeks. I now rather solicit business in that line, but formerly I preferred that the patient would go elsewhere. The plan is cheap, convenient, and efficacious. It has this to recommend it, that catarrh is often associated with other diseases of the respiratory apparatus, and no more efficacious treatment is found than the preparation above described. It is my sheet anchor in coughs, colds, asthma, bronchitis, and the best palliative in phthisis pulmonalis. The article by Dr. Strother, in July 2d, 1881, number of the MEDICAL AND SURGICAL REPORTER, has brought to my notice many cases and reports of its therapeutic value. Being now located in the oil regions I will supply samples to the profession, and hope they will report results.

M. M. GRIFFITH, M.D.
Bradford, Pa., Oct., 14th, 1881.

NEWS AND MISCELLANY.

Diphtheria in Russia.

We read in the *Journal de St. Petersburg* the details furnished by *l'Ordre* regarding the terrible ravages of diphtheria in Russia for the past ten years.

In a certain number of villages and parishes the disease carried off almost all the children under fifteen years of age.

In the opinion of the medical department no epidemic, not even the pest or the cholera, destroyed so many victims; and its ravages continue to spread over a larger surface; even the two capitals are no longer free from the disease.

The details given by *l'Ordre* are drawn from the statistics published by the government and the *Zemstro*. The epidemic of the past few years has been called "the great epidemic" and it is supposed to have originated in Bessarabia in 1872.

During the eight succeeding years it spread into Kerson, Podolia, in fact, to all the departments in the centre, and from that to the east and northwestern part of the empire. The epidemic seems to have followed the direction of the winds, which perhaps carried far the parasitic germs of the disease. The proportion of deaths was very large; thus, in Bessarabia from

1872 to 1879, there were 35,588 cases of diphtheria with 14,949 deaths; in the department of Poltava, which was the most seriously attacked, out of 45,543 persons attacked, 18,755 succumbed, and this in three years, from 1876 to 1879. In the province of Karkof, from 1878 to 1880, there were 28,750 patients and 17,045 died. And there is reason to suppose that these figures are less than the real mortality.

It is incontestable that the mortality increases in proportion to the number of cases of the disease.

But this "Great Epidemic" is not the only one that has spread desolation among the country districts of Russia.

Another very disastrous one raged about 1868, on the banks of the Don, but no exact information concerning its ravages can be obtained. According to the *Messager du Don* whole villages lost their entire infantile population.

In the single department of Khoper, in one year, 1868, up to 6000 children died from the disease.

In 1879 the same disease made its appearance in the province of Stravapol and spread thence over the entire Caucasus; but no exact information concerning its ravages or the number of victims can be obtained.

American Public Health Association.

The ninth Annual Session of the American Public Health Association will be held at Savannah, Ga., November 29th, to December 2d, inclusive. This Association is one which should attract the attention of the profession, as its objects are those of the greatest importance to the welfare of the public, and embrace what many consider the highest and ultimate aims of medicine, the prevention of disease and the improvement of the race through wise sanitation.

Accidents in Traveling Compared with Deaths by War.

An English surgeon, Dr. Hutton, in a recent address, gave the following as the number of persons who had been killed or wounded in connection with railways and railway service, and those who had lost their lives by drowning, in the United Kingdom, in the course of a single year. The railway casualties occurred last year, and are taken from the Board of Trade Returns. These returns show that from the 1st of January to the 31st of December, 1880, no less than 1136 passengers, railway servants, and others were killed, and 3958 injured on the various lines of railway in the United Kingdom. In addition, the railway companies returned 45 persons killed, and 2738 injured by accidents which occurred on their premises, but in which the movement of vehicles on the rails was not concerned. During the several South African and the Afghan campaigns, the number of officers, non commissioned officers, and men who were killed or died of their wounds, was 3200; while the number of wounded shown in the army return was 2178. Thus, while the number killed by wounds was

greater in the wars mentioned, than those killed on the railways, the number injured and requiring surgical aid was more than three times greater on the various lines of railway and their premises in the United Kingdom in one year, than it was during all the period these campaigns lasted.

Alleged Cholera in Philadelphia.

The following correspondence, which we take from the *National Board of Health Bulletin*, illustrates how little foundation—in this case absolutely no foundation—may be required to interfere with the progress of commerce, and how much better it would be to have such interests regulated by an International Board of Health.

Official information having been received from the Department of State that by Royal Order, published in the Spanish *Official Gazette*, August 20, 1881, the port of Philadelphia was declared to be infected, in consequence of reports of the prevalence of cholera there, and directing that all vessels arriving at Malaga, which left Philadelphia after July 31, shall be considered foul and subjected to quarantine, a communication was addressed to the President of the Board of Health of Philadelphia, asking for information, and the following reply has been received:—

HEALTH OFFICE.

Phila., September 24, 1881.

I am directed by the Board of Health to transmit to you the following copy of resolution passed this date. Respectfully yours, etc.,

Wm. P. TROTH, Chief Clerk.

T. J. TURNER, Medical Director, U.S.N.,
Secretary National Board of Health.

Resolved, That a copy of the communication of the Health Officer be forwarded to the Secretary of the National Board of Health, in reply to his communication of the 20th instant to the President of this Board.

COMMUNICATION OF THE HEALTH OFFICER.

HEALTH OFFICE,

September 24, 1881.

SIR: In answer to your inquiry, I have the honor to report that during the current year of 1881 not a single case of cholera has occurred in the city or port of Philadelphia.

Very respectfully,

JOHN E. ADDICKS, Health Officer.

GEN. HORATIO G. SICKEL,
President Board of Health.

The Money Cost of the Assassination.

The following paragraph is taken from one of our dailies: The expenses of the illness, death and funeral of President Garfield, covering a period of eighty five days, are estimated at \$347,650, of which the United States will pay about \$100,000 and the State of Ohio, the city of Cleveland, and private individuals, the balance. Private Secretary Brown estimates the cost of the President's sickness at \$100,000, which would be at the rate of \$1250 a day. Of this cost, the doctor's bills will form the largest item, say \$63,000. Of this

amount Dr. Bliss will want \$25,000, Drs. Agnew and Hamilton \$12,000 each, Dr. Reyburn \$8000, and Mrs. Doctor Edson \$1000. Drs. Woodward and Barnes will get nothing, unless Congress chooses to recognize their services as being not strictly in the line of their duty as army officers. It is thought that the total cost of drugs will not exceed \$500. Such things as beef extract, koumiss, whisky, brandy and wine were all donated, and there is understood to be no charge for services rendered by the Pennsylvania Railroad Company.

We understand from good authority, however, that up to the present, none of the attending physicians have sent in bills, so that the above is in that respect only a guess.

Hop Bitters.

We find in an exchange the following, given as the composition of this nostrum :—

R.	Tincture of hops,	f. $\frac{3}{2}$ ss
	Tincture of buchu,	3 ij
	Tincture of senega,	3 ij
	Podophylloin, gr. j dissolved in spirits of wine,	$\frac{3}{2}$ ss
	Tincture of cochineal,	gt. xx
	Distilled water, ad	$\frac{3}{2}$ xv. M.

The cost of these ingredients, based on prices quoted, amounts to about ten cents. The selling price of the mixture is one dollar.

Vaccination in London.

The epidemic of smallpox which London has recently passed through, gives a special interest to the recently published memoir by Dr. Buchanan, physician to the Local Government Board. During the past twelve months, 1532 persons died of smallpox in London ; of these, 825 had been vaccinated, and 637 had not been ; the matter was doubtful for the remaining 570. It is estimated that of the population of London, 3,620,000 are vaccinated, and 190,000 are not.

From this it may be deduced that the proportion of deaths among unvaccinated persons is 3850 per million, while that for the vaccinated is only 90 per million. For individuals under twenty years of age, this difference is still more sensible ; the proportion per million for the vaccinated being 61, and for the unvaccinated 4120 ; for children under five years, the proportion is 40 $\frac{1}{2}$ per million for the vaccinated, the number of deaths reaching the startling figure of 5950 for the unvaccinated. As is remarked in the *Revue Générale l'Administration*, these statistics demonstrate that vaccination is much more efficacious in the first years of life than later, particularly after the twentieth year, which would tend to confirm the doctrine that revaccination is as important as primary vaccination almost, and should receive proper encouragement.

Dr. Buchanan arrives at the following conclusions : "The inhabitants of London can by vaccination protect their children from the chances of death by smallpox, in the proportion of 146 to 1 for the first five years of life, and

in the proportion of 75 against 1 for the first twenty years.

Items.

—According to the *Pharmaceutische Zeitung*, July 29, of 850 analyses made in June, of food and beverages sold in Nice, no less than 559 were found to be seriously adulterated.

—During the meeting of the International Medical Congress in London some English and foreign doctors were discussing the style of apparel most suitable for the occasion of one of the conversazioni or receptions. Dr. Charcot, of Paris, quietly observed : "As for me, I shall go in my night-dress."

—Dr. James McClintonck, of this city, died last week. Born in 1809, he was a graduate of the Jefferson Medical College, was at one time chief resident physician at the Philadelphia Almshouse, and later City Treasurer. He was a skilled surgeon and an able speaker, but for a number of years was not in harmony with the regular profession.

QUERIES AND REPLIES.

Solution of Nitrate of Silver.

Mr. Editor.—Would say, in reply to Dr. T. G. E., of W. Va: If he will make a solution of nitrate of silver in moderately pure water, make it slightly alkaline with aqua ammonia, then expose to strong sunlight, a week, then filter well and make it neutral with nitric acid, he will have no precipitate. Should not be exposed to light.

A. T. LEVICK, M.D.

Woodville, Md.

Tabes Dorsalis.

Mr. Editor.—In the last number of the *REPORTER*, W. D. B. asks for advice on the treatment of tabes dorsalis.

The pathological condition in tabes dorsalis indicates the treatment, i.e., hyperæmia of the pia mater and connective tissue of posterior column of spinal cord, which leads to hyperplasia of pia mater and structural changes in the nerve substance itself.

Absolute rest in the recumbent position, face downward, for a prolonged period, at least two months. Massage. A spinal bag reaching from the seventh cervical to the last lumbar vertebra, filled with ice and kept on the spine, with a double fold of blanket interposed. After the congestive period had passed away use an ascending stable current of thirty or forty elements, to the spinal cord, for ten minutes every day. The diminution of pain and improvement of bladder will soon be appreciable. Any diathetic condition must be met by proper treatment. Debility and anæmia by the phosphates, cod-liver oil and iron; syphillis by potassium iodide, etc. Free phosphorus has done some good in my hands. Use of strychnine would be manslaughter.

J. G. B.

St. Paul, Minn.

MARRIAGE.

McCONNELL-CULLEY.—On Thursday, October 13th, 1881, at the residence of the bride's parents, by the Rev. Ross Stevenson, n.d., S. M. McConnel, M.D., of Wellsville, Ohio, and Miss Alice Culley, of Florence, Pa.